

To each according to his needs

Uncertainty, lack of purpose and of finance, public distrust. . . . Against this background, Harry Judge has sketched two possible futures, a damp and dispiriting decay or regeneration based upon redefinition of the terms of the educational and political debate.

1. Size and system

The traditional independence and autonomy of English schools . . . is entwined with the contemporary trouble over the size of schools. The need to be self-contained has led to the establishment of very large comprehensives. This is one of the major issues.

It would, of course, be a serious misrepresentation of the truth to suggest that the normal English school is huge: it is not. But the tendency is there, and the responses to it in terms of house systems, tutor systems and the like have been barely adequate.

There are grave dangers to the health of schools in arrangements which divide pastoral from academic responsibilities, and do not create a sense of identity for either pupils or teachers. It is almost certainly now an error to persist in emphasizing the unitary nature of the large English school. Instead, two things must be done or at any rate painstakingly examined.

First, many more imaginative patterns should be applied to internal organisation. If responsibility is delegated and such delegation is given reality in territorial terms (in separate buildings or parts of buildings), if attempts are made to heal the schism between pastoral and academic, collegiate or federal forms of organisation are likely to emerge. At the same time, this kind of federalism could—with even more profit—be applied to the relationships between and among schools and FE colleges.

The value of FE arrangements is best demonstrated by the need to plan provision for young people over 16. We have a highly specialised sixth-form curriculum which influential opinion can neither admire nor change, a ragged but expensive growth of sixth-form work and apparatus in most schools, a disinclination to accord adequate prestige to many courses offered in further education, a dismayingly small proportion of the 16-19 age-group enjoying access to an form (whether part or full time).

In the absence of these certainties which could be based only upon the research which has never taken place, it is not unreasonable to relate this state of affairs both to a nationally unsatisfactory performance in industry and com-

merce, and to the point but hidden assumptions which sustain the secondary curriculum.

Those assumptions appear to link such notions as "general", "human", "academic", "non-vocational", and "secondary". In other words, values such as "utility" or "profit" or even "job" are accorded a distinctly lower rating. This generalisation may be tested against the strong and misleading antitheses which thought and practice conspire to manufacture between "education" and "training". Or it may be applied to the curiously ill-founded assertions—arguments would be altogether too flattering a term—which have pressed forward the Certificate of Extended Education.

2. Sixteen to nineteen

One possible service to secondary schools might be to restrict them to the development of a more sharply defined form of academic education within the sixth form.

Much less would be heard of "the new sixth", and more vigorous growth could be expected in the part-time and full-time sectors of further education. What is most needed is a change of mood which would mark the limits to which "a general education for all" may realistically be pressed.

Such a change would be likely to affect the administrative pattern of education and training in the post-compulsory phase. It might even have effects upon the pattern of institutions providing education beyond the school leaving age. It has, in any case, immediately close links with the secondary school curriculum itself.

The two are closely interdependent, especially if the pre-16 curriculum is heavy with cues drawing many pupils away from a realistic appraisal of their world, and the place in it of work and satisfying skills.

3. Secondary curriculum

This raises as a third issue, the secondary curriculum before 16, more specifically the common curriculum. Any theory of education for those beyond the statutory school-leaving age assumes that there will be diversity and choice. But what precedes that point of decision and division and what should?

Conventional wisdom has until recently assumed that secondary education for all meant the provision of curricula—and indeed schools—suited to the abilities and aptitudes of pupils which were recognized to differ. Talk of common curricula was confined to the earliest phase of secondary education and its purpose was to mitigate imperfect selection techniques by permitting easy transfer.

When comprehensive schools were first established, a wide and free range of curriculum choices was one of their dominant selling points. . . . But there now exists a mindless promiscuity . . . To allow freedom of choice, save within

authoritatively defined limits, is the argument runs, to connive at deprivation.

From such tangled roots grows the presently flourishing doctrine of the common curriculum. . . . The efforts to define and apply it will vary . . . but all are bound to tend towards an agreed, consensual, national understanding of a single and common curriculum. The characteristics of such a curriculum are certain to be a diluted intellectualism, hostility to the vocational, and a sham aestheticism.

Against such powerful tendencies towards uniformity should be set the wisdom of pursuing difference. Educationists, in particular, should recognize the right of the pupil not to be unnecessarily bored.

Pupils will, by the age of 14, have completed nine years of fundamental and compulsory education. For a growing number, all or most of that time will have been spent in mixed ability groups, following a programme of studies within which there is relatively little differentiation. Their tastes will have been to a great extent formed (or distorted).

It is hypocritical and unkind to pretend that either all or none of them wish to study two or more foreign languages, or spend substantial periods of time in a music school, or find excitement in a subject technology. . . . Pupils at the age of 14 often have a not unsatisfactory notion at least of the activities and subjects they wish to pursue. . . . There are strict limits upon what they can be required to do, and even strict limits upon what they might all be reasonably expected to find interesting.

The choice is, therefore, between a doctrine of secondary education which stresses the uniformity of a common curriculum, extending across five years (with, doubtless, common examination to prove that it all happened), and a general policy which, while acknowledging the virtues of an undifferentiated curriculum up to the age of 14, permits a marked change of emphasis towards diversity and well-motivated choice.

4. Standards and accountability

Introduction of such diversity would provoke objections about standards, objections which teachers should be prepared to admit in view of the growing public concern.

The time is now over-ripe for teachers to make it plain that we must accept and develop policies for the continuing evaluation and monitoring of what is achieved in schools. The new evaluation must be visibly different in intention and design from any superficially similar attempts in the past or the present. It will, for example, have no direct connexion (nor it must be hoped, very much indirect connexion) with determining the efficiency of teachers, remuneration.

A new approach will similarly

need to be different in its intention from the present intimidating battery of examinations, notably at 16-plus. That existing arrangements have been enlarged, from relatively simple and limited origins, to become the most favoured method of assessing objectively the achievements and merits of particular pupils.

There is no reason to suppose that it is in any way well adapted to making any comparative or contemporary judgments between particular schools. The need is for a more broadly based evaluation.

The first requirement remains that its desirability should be generally discussed and accepted. The next step is represented by the effort to define what it is that society reasonably and consistently expects of the schools and what the various stages of secondary education ought to have been accomplished during the preceding stages.

That effort of definition may be undertaken in many ways: Nationally and locally, by groups of teachers, parents and employers. There need be no underlying conflict of aim, provided that the emphasis is placed upon those skills, competences and bodies of knowledge which the reasonable man expects most school leavers, and pupils at particular ages, to master.

Nobody is going to claim that any school leaver should be lacking in basic literacy or numeracy; equally nobody will argue that they should all command two foreign languages, or that none should. Once that definition becomes acceptable, the technical tasks of measuring our success in satisfying its terms need not prove daunting.

The control of that process—the role of HMI, for example, or the policies of the teachers' unions—will involve the awkward problems. The integration of the efforts of the Assessment of Performance Unit, of the activities of HMI, of L.E.A.s and other agencies will be intricate and demanding, but in no way as alarming as the consequences of raising content where we now are.

Evaluation must come to be an assessment of learning in the schools, a guarantee that they respond to the open and argued requirements which are made of them, an assurance that the introduction of children are not sacrificed to the innumerable whims of teachers or theoreticians. It will not be a device for classifying the performance of particular pupils or teachers: these are quite different matters.

An acceptance of the principle of accountability based upon evaluation may not be easily secured: its certain alternative is a loss of autonomy by the schools and the teaching profession, whose secret virtues will not for long be tolerated by an increasingly resolute public opinion.

5. Diversity

Three, at any rate, of the four potential issues so far discussed interlock in one main thesis. The

most immediate issue bears upon the education of the age group beyond 16; here the argument for diversity of course and institution, for an improved vocational and professional training, is accompanied by a change in the prevailing direction of argument about the education of the 16-year olds so as to allow the "force" after 14 and the "choice" of the teacher to provide for it.

Once the mirage of uniformity dissolves, present anxieties about the standards of schools will fade. Their force should be acknowledged by the development of a system of evaluation and monitoring providing a basis of fact about what is learned in schools, criteria for policy decisions, and indices of the value of reforms.

It may be concluded that the implications for institutions providing education beyond the age of 16 are substantial: there is no room for complacency in the 16 sector. Such a conclusion is not, however, incomplete. It is accepted that curriculum patterns may change at 14, then there is a *prima facie* case for arguing that schools might in some cases be re-organised consistently with that change. Some large schools might choose a federal pattern with the option of specialisation among constituent parts for pupils from 14-plus. In other cases, an L.E.A. may develop patterns of admission and financing which will encourage diversity at 14-plus.

Nor should anything be done to close the possibility that independent schools might find a form of association with the publicly provided system. If it would be wrong to argue for the restoration of 11-plus, it would be equally wrong to adopt a neatly packaged view of what 11-16 comprehensive schools have to be.

If these last steps in the argument are described as political, then so they are. Education and its future always form a central part of any debate about the nature of society, or about the desirability of it, or about the opportunities available.

But there is nothing in this particular presentation of alternative futures which can be neatly absorbed into the ideologies of right or left. That could happen only if those of us who are public politicians acknowledge the performance of particular pupils or teachers: these are quite different matters.

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Jobs before everything

differs only slightly at the margins, so the final budgets of Oxfordshire and Liverpool did not look all that different.

Liverpool seemed to be more concerned with the end-product of the forward cost-cutting. In Liverpool, the options seemed more open-ended, for example, could conceivably have gone down again, as it did last year. Such a thing was not conceivable in Oxfordshire.

Basically, the decisions, especially where the education budgets were concerned, were remarkably similar. Most areas of the service were affected—except for one. Before everything the jobs of teachers were preserved. The power of the teacher was never felt, though.

All this was merely reflection of the same constraints upon the Westminister, which passed them on in the form of precise instructions to local authorities. . . . If that is so, some might argue, what would be lost by taking educa-

Quick about turn in social priorities

It did a quick about turn in a hurry, the question of social allowances this week.

Monday morning delegates put on end to special allowances for teachers and use the money to buy extra staff and equipment. The decision was taken about the education of the 16-year olds so as to allow the "force" after 14 and the "choice" of the teacher to provide for it.

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Equality threatens in textbooks

Teachers have decided to launch a campaign against sexist school textbooks.

On Tuesday delegates voted overwhelmingly to phase out traditional books which show boys taking an active role while the girls look on. The union plan to start talks with publishers in order to further this aim. They are also going to work through the Schools Council.

Ms Susan Buckle, of Leeds, told the conference that teachers must stop stereotyping their pupils by asking for "strong boys to carry books while the girls make the tea". Ms Vanessa Wiseman, of Lamberth, attacked the NUT for having so few women members. She also criticized the union for failing to provide creches at local or national meetings.

The NUT's new anti-sex discrimination programme is embodied in an executive memorandum. As well as demanding an end to sexist textbooks, this calls for more mixed comprehensive schools; a campaign to awaken public concern over the dangers of sex role stereotyping; better maternity leave and compassionate leave for family illness; five days' paid leave for widows to receive pensions on the same terms as widows.

with these allowances because there can be no doubt about the value of the scheme.

But Ms Heather McKay, of Hackney, said there were more useful ways of spending the extra money. She said that last September two thirds of the 110 pupils entering Shoreditch Comprehensive, where she taught, had had a reading age of below 8.5 years. In other words they could not read. Yet the school had just lost three remedial teachers.

"The money being spent on special allowances for the other 70 members of the staff could have been used to buy back those three teachers. This would have helped the children especially as they are going out into a world where a reading age of 20 is needed to read a rent rebate form."

Mr Murphy, chairman of the NUT's national committee, said the NUT had done a great deal for school staffs. "It would be very dangerous to tinker

with standards as being threatened by 'false economies' in education," he said. Mr Alf Whitshire, the NUT's new president, said on Monday that the NUT was not a union but a professional association.

Mr Whitshire said the Government's paper on public expenditure was "a very bleak period ahead" for education. It was quite clear that public spending during the next three years would be a disaster. "We would fall on education," he said.

There are those who proclaim that education has had its day and that the time has come when it will do no harm. Nothing is further from the truth. I want to make it clear that these three years ahead in education, we are going to provide a very large education for very large numbers of our children. I can assure you there are still schools where there are quite atrocious conditions and many will have oversized classes."

Mr Whitshire, who was chairman of the NUT's action committee for the last six years, described a primary school on five sites and a secondary school on one building and which had two empty classrooms but so few staff that the school had to be taught in groups of 40.

Heavy responsibility rests with the NUT to alert public opinion to the facts relating to provision in schools. In the end the will of the people will prevail, and it is that we must seek to strengthen, monitoring of the implication of authority policies and the influence of opinion in favour of

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Sue Cameron reports from Scarborough on the NUT's Easter conference

Old guard attacked over exams

The "educational old guard" was strongly attacked on Monday for its proposed examination reforms.

Mr Fred Jarvis, general secretary of the NUT, predicted "a major battle" on the proposals for a common exam at 16-plus and for the establishment of the Certificate of Extended Education. Already a campaign had been launched by the opponents of what Mr Jarvis called "these important reforms".

"If you want to see how the educational old guard go into action just watch the manoeuvres of many universities and CGBs on examination reform. Hell high no fury like a vested examination interest when it sees its powers threatened. And this is how the old guard are reacting now to the proposals the Schools Council will be discussing this summer."

"Let us make no mistake as to what the basic issues are. The educational establishment, having insisted on feasibility studies, are seeking delaying tactics now that studies in the schools have clearly demonstrated that a common exam is not only feasible but desirable. This is not just a challenge to all the work and thought and research which has been undertaken through the agency of the Schools Council, in an otherwise wholly or mainly comprehensive situation, I shall not out that as members of the TUC the NUT would be taking part in the forthcoming talks on the Chancellor's new plans for bringing inflation under control."

Mr Jarvis said the exam reforms had first been mooted more than 10 years ago. No one could claim they were being rushed through. It was the nation's children and it was imperative they should be approved by the Schools Council governors and implemented by the Education Secretary.

Mr Jarvis, who is a member of the TUC's general council, went on to warn delegates that "some very tough decisions" would have to be made by the whole trade union movement because of the present economic situation. He pointed out that the pound was the weakest it has been in a long time and that it was imperative that efforts to secure an agreement on prices and incomes between the Government and the TUC must continue.

"The alternative is a complete free-for-all. And is there anyone who believes teachers would benefit from such a free-for-all?" But he warned union members that trade unions did not always see eye-to-eye on economic policy or on education.

On several occasions the NUT have said they would be prepared to sink their own identity if the other existing organizations agreed to form a professional association to represent the whole profession. In all sincerity I make that offer again today."

Mr Whitshire said that in Finland five separate teachers' associations had agreed to form a single organization a few months ago. The Finns had not "a splendid example to teachers elsewhere."

"Surely it is possible for all teachers' organizations to meet together with the object of thrashing out the basis upon which a unified professional organization can be established. This is the greatest step we can take towards our goal of full professional status."

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Mulley promises a reprieve on banding

Education authorities are to be given the legal right to continue banding 11-year-olds.

Mr Fred Mulley, the Education Secretary, announced on Saturday that a special amendment on banding would be included in the Education Bill now going through Parliament. The Bill is designed to end selection in secondary schools but the new amendment will allow authorities to carry on existing banding arrangements to ensure an even spread of ability in the comprehensives.

In his speech Mr Mulley said banding was a "difficult issue". It was a form of selection and if the new Bill went through in its present form it would therefore be illegal. But some authorities, notably Inner London, Norwich and Humberside, felt banding was the only way to avoid "gross inequalities in the social and educational balance of secondary schools".

"The banding would mean that some comprehensive schools would become grammar schools in all but name and others would never attract more than a handful of able pupils. I do not altogether share these fears. But I recognize that there are special problems and it was for this reason Gerry Fowler told the standing committee that the Bill would not of itself make banding illegal."

"Since then I have had further representations from various quarters that in order to remove any remaining uncertainty Gerry Fowler's undertaking should be written into the Bill itself. I am accordingly proposing an amendment to clause two."

"The effect of this amendment is that where at the passing of the Act genuine banding arrangements exist in an otherwise wholly or mainly comprehensive situation, I shall not out that as members of the TUC the NUT would be taking part in the forthcoming talks on the Chancellor's new plans for bringing inflation under control."

Mr Mulley emphasized that the amendment would not be possible to increase educational spending in the way the NUT wished until inflation had been curbed. He pointed out that as members of the TUC the NUT would be taking part in the forthcoming talks on the Chancellor's new plans for bringing inflation under control.

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Mr Mulley: "difficult issue."

amendment on banding did not represent a departure from the comprehensive principles enshrined in the Bill. He added that he hoped it would eventually be possible "to dispense with even this limited form of selection". But he was not prepared to set a definite time limit for putting an end to banding.

Mr Mulley addressed the 2,000 NUT delegates as trade unionists rather than as members of a professional association. Although he paid tribute to the union's educational work, he laid greater emphasis on their influence within the TUC. He congratulated them on the part they had played in securing the EG, a week limit on pay rises and he said they had done "a good trade union job" in improving the pay and conditions of their members.

He added that the NUT's power and influence carried with them considerable responsibility. Later Mr Mulley told a press conference it would not be possible to increase educational spending in the way the NUT wished until inflation had been curbed. He pointed out that as members of the TUC the NUT would be taking part in the forthcoming talks on the Chancellor's new plans for bringing inflation under control.

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Pre-schooling best for the retarded

The branch wanted at least five hours free time during a 25 hour week and extra payment for all work over 1,000 hours a year. Standing in for absent colleagues could also be paid for.

Mr Chalk said teachers had worked under their present contracts for 100 years and it was

It was agreed that it was five for normal children in handicapped children in midst. But, as one teacher why should handicapped

Letters came to a head early last year when the principal intervened at a meeting of students and staff who were trying to gain full control of the composition fees. This fee—paid on behalf of students for their social activities—was partly controlled by the principal. The principal's exclusion of the principal and their insistence on control of educational policy, as distinct from participation in educational activities, was unconstructive. The large

press into hotel hazards

The reservations include the failure to consider how different ways of organizing these exams affect the costs of examining at A level or a change in post-16 examining. The estimates take no account of the cost of changing over to new exams.

The boards may have to open new

Sadlers Wells for 11 years, chairman of the coordinating committee between Covent Garden and the Coliseum.

employers had refused to offer any increase in London weighting. This week Mr. Fred Jarvis, insisted on a rise the management should give our views sympathetic consideration."

importance in the world, in their secondary schools the teachers give the children the choice of which

Were these luxuries still available in France, I wondered, if I lived in Paris, how would I ensure

It used to be said (and perhaps still is) that the public schools of England educated and created a

French educational elitism does
depend solely on selection by

Every year local education author-

Sadlers Wells for 11 years, and chairman of the coordinating committee between Covent Garden and the Coliseum.

employers had refused to offer increase in London weighting. This week Mr. Fred Jan

general secretary of the NUT, said he was pleased the arbitrators had forced the authorities to go from a nil offer to £2.6m.

"The arbitrators did accept some of our arguments and it has now been established that an increase is justified despite what the local authorities said. The only difficulty is that the onus is now on the teachers' panel of the Burnham Committee to decide whether or not to give any rise to people in the first category."

Mr. G. H. Smith, an arbitrator recommended no increase for the fringe areas they said that if we insisted on a rise the management should give our views sympathetic consideration."

Cornflakes and Courvoisier on Dartington menu

Where among contemporary psychology, sociology and philosophy are there fruitful themes for the development of educational theory and practice?

This was the question that inspired the first in an ambitious series of annual conferences on education at Dartington Hall, Devon. This year's, which took place earlier this month under the chairmanship of Mark Braham, resident writer at Dartington, was called "New themes for education".

How babies come to terms with life

One of the star turns was the triple performance from Nottingham University, John and Elizabeth Newson, joint directors of the Child Development Research Unit, and John Shotter, lecturer in the psychology department.

John Newson took a theoretical approach, making "communication" something more than just a synonym for language. It was central in the development of babies and children.

He described how shared understanding between mothers and babies begins, and he suggested that by the age of one, normal babies are highly competent in the art of communication. "deliberately making known their desires and dissatisfaction, joining in games, sharing jokes, imitating all sorts of meaningful actions and gestures, and ever teasing their mothers—all without the help of formal language and without even a passive understanding of words".

Mothers respond sensitively and selectively to things their babies do, giving meaning to their actions, teaching them what is socially acceptable, coherent and appropriate in the family and outside it.

The meaning that mothers thereby give to their babies' behaviour means this behaviour eventually comes to mean something to the baby too. "It is only because he is treated as a communicator that he learns the essential human art of communication", Mr. Newson said.

And as observers of this "cultural construction", researchers needed to use their imaginations to understand what was going on, he added. Elizabeth Newson used as background to her paper the Nottingham longitudinal study of 700 children, based on interviews with their mothers throughout their childhood.

She started from the premise that a culture-free child is not possible, but that there is a thing as a culture-deprived child. Young children depend on their parents to welcome and seek cultural experiences for them.

From this she went on to talk about the sort of experiences that lie outside the home—religious services, films and dog shows, were on her list, as well as trade exhibitions, Nottingham goose fair, football matches, race meetings, zoos, cathedrals, museums, Big Ben, Bunbury Cross, Gretna Green, Carnaby

The conference follows the setting up last year of the Dartington Society to explain and extend the activities of Dartington Hall. Not that there was any progressive propaganda for Dartington. Just progressive propositions from an impressive array of academics who were billed as the "growing edge of the arts, sciences and humanities". Some preached their new themes with fervour; others just tossed them provocatively into the ring.

On the receiving end were lecturers, social workers and educational psychologists, but, unfortunately, only a sprinkling of teachers.

This was due partly to it being held in term time and partly to indifference or even hostility by i.e.s, many of whom were unwilling or unable to advertise the event or cough up the conference fee.

This was a pity. Most delegates thought the mixture of high thinking in a medieval setting and protracted walking

in one of the finest landscape gardens in England well worth it.

Some of them, it must be admitted, felt that a rapid resume of the dilemmas of science, the construction of reality and the nature of evolution all between breakfast and lunch was a little like chasing their cornflakes down with Courvoisier. "Tea, walks and talks" was wisely tabled into every day from 3.30 pm onwards.



Dartington: Fine gardens and a medieval setting.

Mr Shotter's analysis of what, how and why a child learns about what, how and why things are done, complemented the Newsons' research findings.

"It is not just a 'one-pass' affair either," a mother, he said, can put a right or wrong interpretation on her baby's actions, which has to be modified because of his response. "In other words there is a social process of negotiation involved. The meaning of an action or utterance is not just a matter of the intention it expresses. It is also a matter of how it is taken."

If a mother cannot simply cause her child to do anything, he said, so we cannot know how to cause the development of children. The best we can hope for is a realistic understanding of what will actually help.

"This is surely better than the illusory hope that we can find certain ways of causing their development, thus misleading ourselves and them in all kinds of quite irrelevant and positively unhelpful ways."

Report by Frances Stadlen

The new themes discussed at Dartington are to be published as a series of papers. Among the other speakers were: Maurice Goldsmith, director of the Science Policy Foundation; Iain Hyslop, director of the Edinburgh University research unit on intellectual development; Robin Hodgkin, lecturer in education at Oxford University; Sir Alec Clegg, Gabriel Fraguere of the European Cultural Foundation in Brussels; John Lishman, reader in neuro-psychiatry, London University; Peter Vanwick, lecturer in psychiatry, London University; and Lionel Elvin, formerly director of London University Institute of Education.

The Dartington Hall Trust was well represented. Maurice Ash, the chairman, gave a paper and so did Mark Braham.

Do as you would be done by...

R. D. Laing offered as his theme "common sense". Dressed in a black suit, white shirt and black tie, his face as white as a sheet, he passed on St Augustine's advice not to do unto others what you would not have done unto you.

He went on to discuss the capacity to feel, which people had in varying degrees and which had often become far from straightforward.

Feeling is not something that can be studied scientifically, he said. If a method discounts feeling, then the study of feeling cannot be done by that method. A biologist dedicated to a loveless method can tell us nothing about love.

He hoped that we would see a thaw, not a freeze, although he was not very optimistic. It was frightening how ways of getting in touch

with our feelings—primal and radical therapy—had become a major industry: "We've cultured our angels and demons. We may now culture out our dreams and feelings."

At the end of the session Spencer Milham, director of the Dartington Social Research Unit, discussed poverty. He played videotapes of hospital boys expressing their contempt for their social workers and probation officers.

The themes of earlier speakers seemed to confirm the reasonableness and simplicity of these boys' desire to be treated as the able, if disturbed, individuals they appeared to be. In the light of all that had been said, they seemed more like prodigal sons than hardened criminals.

No substitute for mother

On the last morning, Barbara Tizard, senior research fellow at the Thomas Coram research unit, London University, expounded the choice between "systematic" and "spontaneous" pre-school education.

For young children, she said, education effectively goes on in the family and not at nursery school. This does not mean that we should not have schools or that we should be content to rely on kindly souls round corners.

Childminders and others are most unlikely to provide anything like the same level of education as mothers. It is anyway necessary to rely on substitute care and education

if mothers are unwilling or unable to do so themselves.

A nursery can either attempt to mimic the family with the spontaneous teaching arising out of everyday contacts, dependency, affection, or go in for systematic teaching along the lines of Russian nursery schools or American Headstart programmes.

In systematic teaching it is a question of working out what children can learn, and the most efficient way of teaching it. This is not easy, and if unsuccessful can be tedious and expose children to failure and criticism. Moreover it requires a profession of infant educators with explicit aims.

Sheer human waste of mass schooling

Frank Musgrove, professor of education at Manchester University, talked about how ecstasy and madness could be achieved in the "mass-gins of the world". This is where people experience "wholeness, oneness, holiness", he said. Education consists of periodic forays into these worlds.

Society needs to and no doubt will rephase education over the whole of life. This did not make him a schooler, but he deplored "the sheer human waste and desolation of contemporary mass schooling that must surely bring about its decline".

"We have constructed a vast national network of bear pit classrooms, and our job in teacher training is to give patience and endurance to baited bears."

His concern was with "the conditions in which we can become and remain humans: men and women things". This had led him to try to put what he thought were some successful births of successful counter identities in the images of the world to an empirical test.

It might make all the difference if marginality were voluntary or involuntary, and it had status or was stigmatised. He had studied some marginal groups. Four were "unitary and high status": employed artists, late entrants to the Anglican ministry, a full communion of Islamic mystics in the Old world and Iluro Krishna devotees, both the latter being young, upper class and English.

Three groups were "low status and stigmatised"—people who had gone blind as adults, incurably handicapped residents in a Chelsea home and homosexuals who had decided to "come out".

The first four had all constructed new realities. Their consciousness had become intuitive "fluid" and they had experienced "bliss". Though apparently cut off from society, they felt they had rejoined humanity. They felt "oneness" with life.

"There is no automatic payoff from plunging people into 'centre worlds', said Frank Musgrove. "The blind and disabled did not unscramble the conceptual framework which had always held the world in place, they constructed a super-normality."

The other groups had all excepted a state of limbo and ambiguity. Many had constructed new worlds, but for a long time they had felt utterly lost.

"I am not suggesting that we all become homosexuals or join Krishna communes. My subject is not consolation; it is confrontation. I am talking about cognitive change and expansion about lifelong education as episodes and exploration which provide a context for personal realignment with reality."

The counter-cultural generation, who were only a minority of mainly gifted and highly intelligent young people, are the authentic "curriculum developers" of our time and deserve as much attention as the Schools Council.

"We have a glut of so-called data—of things given and we have a veritable famine of experience. The real problem of education is not the distribution of 'objective knowledge' (the difficulty is not to obtain it, but to avoid it), but the distribution of experience, which is terribly scarce."

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West Germany

Court upholds principle of 'broad Church' schooling

by David Dungworth

Three verdicts by the Federal Constitutional Court in Karlsruhe on December 17, 1975, but not published until late last month have ended a long-standing controversy over the religious nature of West German primary and secondary modern school education.

They have confirmed the legality of changes made by the individual Länder in their school laws during the late 1960s which established the Christian Community School (Christliche Gemeinschaftsschule) as the only type of State school in Baden-Württemberg and Bavaria and as the normal school form in all the other Federal States.

This pattern of schooling, non-denominational but based on broad Christian principles, represented an attempt to make religious education acceptable to the vast majority of parents.

As a result it antagonized those with more deeply-held religious or anti-religious convictions and led to complaints of too little religious teaching from the one side and too much from the other.

In all, 77 families petitioned the court on the grounds that their constitutional rights to determine the education of their children and to practice their religious beliefs were being infringed.

Some of the parents in Bavaria complained that the regulation allowing head teachers to form classes consisting entirely of children of one denomination when a school year comprised at least two classes placed minority groups at a disadvantage.

Others, like the seven plaintiffs from Baden-Württemberg, where the Ministry of Education had said that the 1967 school law was in-

tended to strengthen the Christian character of the State schools, were opposed to the inclusion of any religious instruction in the curriculum.

The Federal Constitutional Court ruled that the Länder education authorities have the right to decide what form of schooling they will provide. The Federal Constitution does not forbid them to introduce a religious element since Christianity formed the foundation of western culture and has largely determined the values and attitudes held by contemporary West German society.

To ensure freedom of conscience, however, compulsory religious instruction will be kept to a minimum. State schools must not be bound by the beliefs of any particular denomination and they must not be allowed to engage in "missionary activities". Christianity must be recognized as a cultural and educational factor but not required as an article of faith.

The 51 court actions brought by parents in North-Rhine-Westphalia argued that the State's failure to provide denominational schools for their children was a breach of its constitutional duties. Similar arguments were again given by the Federal Constitutional Court in rejecting their protests.

In a pluralistic society the State could not maintain a sufficient variety of schools to fulfil the wishes of all families. No conflict of conscience was involved for parents with strict religious beliefs if they were required to send their children to a Christian community school also attended by those with more moderate views and those with no religious convictions at all.

The court said this type of school was the one most likely to promote the Christian principle of tolerance for the opinion of others and was at present the best possible compromise between the differing attitudes to religion in the community.

Australia
Survey reveals one-in-seven illiterate

from John Kirkaldy

SYDNEY One in seven Australians cannot read well enough to cope with everyday life, according to a survey by Dr Judith Goyen, a lecturer in education at Macquarie University in Sydney.

The survey, based on a study of 983 adults aged 16 and over living in the Sydney metropolitan area, estimates that 65,000 Australian-educated adults in Sydney had not reached a reading age of 10 by the time they left school.

Figures for migrants to Australia were even worse, with 59.4 per cent being found functionally illiterate. According to Dr Goyen, this means that there are about 275,000 people in Sydney out of a total population of approximately two million who cannot cope with many of a normal day's experiences.

The survey asked respondents to read telephone dialling instructions, classified employment advertisements and application forms. Those who failed 25 per cent or more of the items were classified as functionally illiterate and those who passed more than 75 per cent as literate.

Almost 4 per cent of Australian or British-born adults failed the test. The illiteracy rate was only 1.6 per cent among the under 30 age group, but 11.9 per cent for those over 60. Five per cent of females were illiterate compared to 2.3 per cent of males.

Dr Goyen feels that the survey has some important implications for Australian education: "Our school system cannot be blamed for the illiteracy of these people, since the majority of these adults were educated overseas. Nevertheless, as citizens of Australia, their needs should not be ignored and they should not be discriminated against in adult literacy programmes."

She feels that Government and industrial organizations ought to use international symbols wherever possible and to be sympathetic to those filling out official forms.

Republic of Ireland



Twenty-two per cent entering post-primary school have reading difficulties.

Poor readers' problems highlighted

from our correspondent

DUBLIN Major problems of literacy among children transferring from primary to post-primary schools in the Republic are outlined in a new report by the Association of Remedial Teachers of Ireland.

The report, based on a survey carried out by its members, estimates that some 22 per cent of children entering post-primary schools have reading difficulties. This finding, derived from the Scholastic Reading Test, A, reinforces similar statements that have been made in the past by the association and by the Teachers' Union of Ireland, whose members teach in the non-selective post-primary schools to which a high proportion of those with reading difficulties go.

It stands to be sharply criticized, however, by the Irish National Teachers Organization, representing teachers in primary schools. The INTO variously claims either that the tests used are inconclusive, or that problems of literacy among primary school leavers may be traced more directly to overcrowded classrooms and a shortage of proper facilities.

The survey suggests that the reading difficulties it discloses are greater among boys than among girls, and more pronounced at the lower end of the socio-economic scale.

NEW YORK The mysterious decline in scholastic aptitude among American college students can be explained by a "baby boom" that followed World War II, according to Dr Robert Zajonc and Dr Gregory Markus of the University of Michigan.

The College Entrance Examination Board, which administers the Scholastic Aptitude Tests (SAT), standardized measures of verbal and mathematical skills which are taken throughout the country by pupils who hope to go to college, found that this year's college freshmen fared much worse than their immediate predecessors and that in fact, the average test scores have been falling steadily since 1964.

These findings have prompted heated accusations and counter-accusations between teachers and administrators, and the widespread use of television, and the emergence of a top-level panel to investigate the causes. Most educators, including the college board, think they are stumped by the phenomenon.

In the current issue of *Psychology Today*, Drs Zajonc and Markus contend that higher birth rates lead to lower scores on achievement tests. The intellectual ability of children, according to the authors, is directly dependent upon contact with adults. Such contact generally diminishes as more children are born into the family. Thus, in a large family the first-born has the best chance for intellectual development.

The SAT scores reached a peak in the early 1960s "when many of the students taking the test were first and second-born children born during the war. The average scores began to drop as their brothers and sisters—offspring of the baby boom of the late 1940s and early 1950s—had entered the college market," the researchers write.

They add: "A child who is the fifth of six grows up in a world influenced by five child-sized minds. The first-born child, by contrast, grows up with his parents as primary forces, which gives him the maximum intellectual capacity."

Since America has been approaching zero population growth for some time, it will be possible to test this theory shortly, as children from smaller families begin to reach college.

WASHINGTON Educators are tired of taking the blame for pupils' declining performance when much of the reason is lack of support and motivation in the homes and in the pupils themselves, according to Mr John Ryor, president of America's largest teachers' union.

Mr Ryor, leader of the 1,700,000-member National Education Association, said in Washington that untrained, apathetic and hostile pupils who made little effort to learn and expected to be entertained could not be held blameless for the declining standards at schools.

He Ryor blamed television—"the major box"—for many of teachers' difficulties. Too many programmes had anything but a positive in-

Italy

Local decision-making comes to a halt

from Dalbert Hallenstein

VERONA The application of the second part of a 1973 law aimed at decentralizing Italy's school administration has come to a total halt. The 1973 law created an elaborate system of elected school and regional councils designed to involve local communities in the running of their schools.

The first part of the reform came into effect in February 1975 and more than 16 million parents, teachers, school workers and pupils elected thousands of class and school councils.

The second part, consisting of the election of district, provincial, regional and inter-regional councils should have become operative by February this year, but now cannot become effective until at least next October. For technical reasons there is now too little time left before the close of this school year to hold the elections.

The reasons for the delay, which is now undermining the credibility of the entire reform, are complex and at the moment the central government, the regions and the political parties are each accusing the other of being responsible. Once operative, the district councils will play a vital part in decentralizing Italy's rigid, Rome-based school bureaucracy. The districts containing no more than 20,000 pupils will consist of rural and urban zones sharing common social and economic features, such as support systems, health services and industrial and craft activities. Members of the district councils will include unionists, farmers,

members of the professions and trades, representatives from local authorities and, of course, elected parents, teachers and pupils.

The district councils will be responsible for assessing school building requirements, for authorizing and planning new schools, for programming all aspects of vocational training in harmony with local needs, and for supplying a wide variety of services such as libraries, sports and cultural facilities, adult education centres and technical advice teams to guide school councils.

The delay in holding the district council elections has been partly caused by the need for the regions to map out the districts in their territories. Although this complex task has taken much time, most regional governments have now presented their school district plans to the Ministry of Education for approval.

But despite constant complaints from the Ministry that the stalemate has been due to the incapacity of the regions to formulate their district plans punctually, the first two regions to present their plans, Tuscany and Emilia Romagna, have so far received no ministry approval. Their plans were presented more than a year ago.

These two regions, which are both governed by left-wing administrations, claim that Signor Franco Maria Milardi, the Christian Democrat Education Minister, is deliberately sabotaging their decentralizing plans for political reasons.

United States

Researchers blame declining standards on 'baby boom'

from Thomas Cahill

NEW YORK The mysterious decline in scholastic aptitude among American college students can be explained by a "baby boom" that followed World War II, according to Dr Robert Zajonc and Dr Gregory Markus of the University of Michigan.

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France

Giscard moves to mollify protesting students

from William Farr

PARIS Faced with renewed and expanding strikes in protest against the decree reforming second cycle university courses (TES, April 2) Mme Alice Saunier-Seïté, Secretary of State for Universities, has begun a new series of consultations with students' and teachers' unions.

The consultations, however, will be limited to the methods of implementing the decree. The Secretary of State has emphasized that there is no question of the Government withdrawing or changing it.

Nor would there be any change in the timetable which requires universities to submit their curriculum proposals by December of this year and to start giving new job-oriented courses for bachelors' and masters' degrees in October, 1977.

It remains to be seen whether this new consultation will be sufficient to ease the current unrest. It is probable that the real cause of the trouble among students is not this or that decree but a widespread fear that because of the Government's economic policies, whatever courses they follow there will be no jobs for large numbers of them when they leave the university.

Mme Saunier-Seïté has made another gesture of conciliation to the students. A year ago when demonstrations started to disrupt work and close down certain universities she warned the students that the time lost might make it



Flashback to the troubles of 1968.

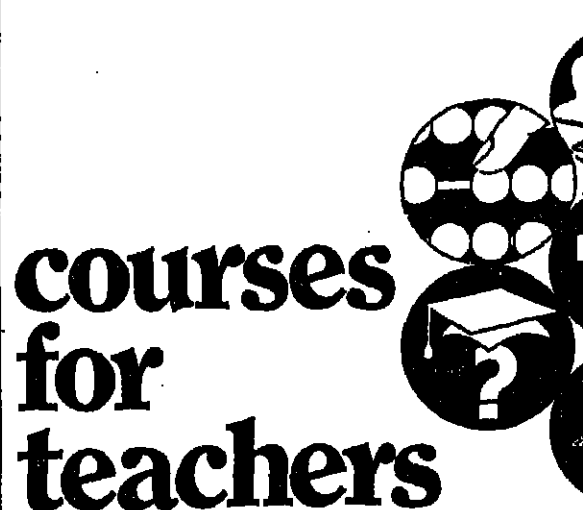
impossible for diplomas and degrees to be awarded at the end of the academic year.

The warning was interpreted and reacted as a threat aimed at frightening students into behaving themselves. Mme Saunier-Seïté has now announced that there is still enough time for universities to extend the academic year by two or three weeks so as to be able to comply with the examination regulations.

Meanwhile, at the express request of the President, M Giscard d'Estaing, Mme Saunier-Seïté has been explaining and justifying the decree's provisions in numerous statements in the press and on television. She has insisted that the sole purpose of the reform is to allow universities to offer courses that will prepare students for new kinds of jobs and not only for traditional professions which are overcrowded. This is what students, parents and society expect of the universities.

The decree is not designed to select or to reduce the numbers of those who follow second-cycle courses and thus to reduce public expenditure on universities, she says. Nor will it subject higher education to the needs and interests of industry and commerce. Fears that teaching and research standards will fall or that the universities will become vocational training centres would only be realized if those who run the universities failed to assume and exercise their responsibilities.

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Holland

Government plans more control over private sector

AMSTERDAM A Government move to change the education clause of the Constitution has caused unrest, especially among the two most important and conservative-minded Opposition parties, the People's Party for Freedom and Democracy (VVD) and the Christian Historical Union (CHU). The Government wants more direct powers over the denominational private schools.

The Government is proposing to introduce direct supervision of staff appointments and curricula by statutory measures by revising the Constitution. The schools, which form 37 per cent of the total, are Government-subsidized.

Although Parliament will have to approve these measures later many fear that such a change will undermine freedom of choice.

The critics also think that the Government may want to prevent the establishment of new denominational schools.

Arnold Lissauer

Sweden

Union calls for books ban

The Swedish Confederation of Trade Unions (Landsorganisationen), equivalent to the British TUC, is launching a campaign for the banning of 20 economics and social science textbooks used in secondary schools. The books, it claims, defend business values at the expense of the unionist view among other things, arguing that improvements in working conditions jeopardize employment.

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LETTERS

L.e.a. spending—or how a £12 lecture cost £100

Yours faithfully,
O. R. JOHNSTON,
Director,
Nationwide Festival of Light,
37 Eastwood Road,
South Woodford,
London E18 1BN.



Support for DES proposals

It does not need much imagination to see the serious implications for the community as a whole if the schoolchildren are divided along linguistic lines.

JENNY NICHOLSON,
Secretary, Bangor, C.A.S.E.

Support for DES proposals

In any case, I have never had such a fuss made about one silly little lecture fee, and unless he refunds me the £4.45 deducted in tax I will refuse to lecture for the London Borough of Brent in

If I were looking for possible economies in the educational service, I'd know where to start. The answer to this one is so simple—give the organizer of in-service courses a sum of money, to spend as he wishes, for outside lectures.

DAVID HOLBROOK,
Haverhill Road,
Stapleford,
Cambridge.

Bias towards the NUT

well-motivated section of the population—rarely comply with high standards. If maladjusted children can be made to behave as model students, then they have been “cured” of their maladjustment. A fair proportion of maladjusted children whom I have taught have dropped out of normal schools because their parents annulled their

maladjusted boys and girls are often educationally unacceptable. If a boy is so disturbed as to attempt to take his life it is doubtful that he will find Pythagoras's theorem a continual source of fascination.

D. COUTTS,
165 Willow Avenue,
Edgbaston, Birmingham

Some five weeks later the KKK decided to take action in selected schools where, of course, the KKK UWT members were already making an impact. The point here is

while the whole of the NAS membership in Sandwell is involved in some way or other, a very small portion of the membership is taking action about that for cooperation?

A. A. HILL,
General secretary,
Sandwell NAS/UNIT

In general the message I received from the conference was that it thought the proposals were very much on the right lines and that the DES should get on with them. Phrases like "a fair drubbing" and "stormy waters" give a totally misleading impression.

Stones at the ready

should regard it as being four fifths full. Others, much more fortunate, will realize that the pot is slightly overflowing.

While under other expenditures account headings severe reductions in real terms have created protection for the poor, the

tion, aimed at lessening anxiety and tension in both children and adults, making available non-stigmatizing help to those with above-average emotional, social and educational difficulties, and providing a framework for education in which a broader range of needs can be met. Fortunately, there are new

We are aware that there has been rapid recent growth in the number of special units and agree that it is too soon to judge the efficacy of various administrative arrangements. Nevertheless, we feel that there is a need for clarity of thinking in aims, methods and content in the educational treatment of different types of disturbed children.

types of disturbed children. We
ever the administrative arrange-
ments or however they are labor-
—and it is our sincere intention
add to this.

MARY D. WILSON,
MARY EVANS,
Directors,
Schools Council Project,
Pupils.

Amazed by Mr Freud

ter, are we soon to see him
suade 39 plus assorted dogs
"Brand X" is best for them

MAGNUS S. PARK,
Bidston Road,
Birkenhead,

Why then do we persist with
Application forms can be obtained
from... Could not I.e.a.s and pro
fessional bodies agree on a form
that could be used nationally?
It is too simple. There must be
something wrong with my reason
ing!

NORMAN M. BUTTERWORTH
Headmaster,
Updon-by-Chester County High
School,
Cheshire.



Second, schools are establishments whose primary social role is education, particularly education of skills that will equip a child to become a useful worker or parent in society. Schools are not designed to take care of the full treatment of delinquency.

Third, children are not placed in community homes generally because of deficiencies in their schools but because of deficiencies in the parents and themselves. Do social workers want to declare themselves redundant? Their function

The general point is that a school with a well-developed pastoral system (and many have these) can achieve next to nothing with delinquents if there is not a parent on the other end who is willing to take the major responsibility for the behaviour of a child of school age. This is the present legal responsibility anyway.

It is easy, in the heady atmosphere of a conference of specialists to lose perspective. Irresponsible statements, as we know, often abound; publication of such statements can cause only harm.

BOB MASON,
J. Heathfield, Bagatelle Road,
St Saviour, Jersey.

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6-9 August Churchill College, Cambridge

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10-12 September York University

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For further information please apply to: The County Further Education Officer, Mid Glamorgan County Council, Sunnyvale, Bridgend, Mid Glamorgan. Tel.: Bridgend 82111.

Workshop/Course

Applicable Mathematics for Non-Specialists in Colleges and Sixth Forms

July 4th 9th, 1976

Reading University

The Schools Council Sixth Form Maths Project (1969-76) has devised a 1-2 year course for non-specialists, using material based on the principle of applicability (Heinemann Educational Books), and leading to a new kind of AO-level examination with hints and check-ups. Application forms and further details from:

Short Courses Office, The School of Education, Reading University, London Road, Reading RG1 5AQ.

Sport

Weight record goes

by Stanley Levenson

Richard Swick, of Gaywood Park School, King's Lynn, broke the British schools clean and jerk record with 93kg when England beat Wales by 109 points to 91 in a weightlifting match at Ammanford Comprehensive School. This was the first schools weightlifting international to be staged in Britain.

Wales won only two of the nine events. British champion Ray Williams (Holyhead Comprehensive School, Anglesey) took the fly-weight title and Chris Evans, the sole competitor, won the super-

heavyweight section in which, for obvious reasons, there are few boys lifters.

The other English winners were Colin Williams (All Hallows School, Speke, Liverpool), Mark Bickerstaffe (Woodfield High School, Doncaster), Paul Town (Houghsde High School, Leeds), Tony Little (Harper Green Secondary School, Bolton), Nicholas Fry (Hrood Burnas School, Swindon), and Paul Sandler, of Manchester.

Most of these boys will go to West Germany at the end of July for a powerlifting international.

Nethall champions at long last

Billinge, Comprehensive School, Blackburn, rubbishes last year, have won the 1976 school under-18 nethall championship. In final day at Manchester they beat Bolton School 11-10. Lesley Fish, the Billingie captain, is also the English schools captain.

The other two finals were won much more easily. Croydon High School, Surrey, beat Rossholme School, Highbridge, Somerset, 12-3 in the under-16 section and Arndale Hill Comprehensive School, near Nottingham, beat Cardinal Wiseman RC School, Coventry, 11-3 in the under-14 final.

Their own coach

Nine girl fifth-formers at Willowes Hall School, Gornal, Dudley, Worcestershire, school like judo so much that they have hired an instructor at their own cost to give them lessons. They are doing it instead of the usual physical education lessons.

Mrs Pat Percival, from a local judo club, is taking them for a six-week course. Some of the girls say they intend to carry on with the sport, leaving school, but others want to put it to more practical use.

Anne Gutteridge, aged 16, who wants to join the Royal Navy, says: "A bit of self-defence will help me with any matey nutters."

Irish take hockey title

Jim Duthie, a Scot, was top scorer for England, but the Irish, for the second successive year, won the Green Shield international schoolboys' hockey championship in Edinburgh.

Glasgow-born Duthie scored six goals, four of them in the 7-0 defeat of Scotland. Despite his clearly tartan family Duthie was eligible to play for England because he is a pupil at Bishop's Stortford College, Hertfordshire.

But his performance and England's success came too late. By then the all-Ireland team had won the tournament.

The result turned on the England-Ireland match, which was drawn 2-2. Duthie put England into the lead twice and twice Ireland equalized with goals from Frank McGladdery, Newry High School.

McGladdery also scored two in the 3-1 defeat of Scotland. The other Irish scorers in the four matches were Robert Matheson, of New Park School, Dublin, and William Haughton, of the Friends School, Lisburn.

David Godwin (Aldenhurst School, Hertfordshire) with two, and Chris Rule (Langley Park School) were the others on the England score sheet. Scotland's two goal-getters were Donald Iley (Strathclyde School, Perth) and Tom Iley (The Rudolf Steiner School, Edinburgh). Lone scorer for Wales was Phil Tubb (Queen Elizabeth's Grammar School, Haverbury, Worcestershire).

Results: Scotland 1, Wales 1; England 2, Ireland 2; Ireland 3, Scotland 1; England 0, Wales 0; England 7, Scotland 0; Ireland 1, Wales 0.

In brief

Book exhibition

An exhibition of books for and from the Third World is to be held at London University Institute of Education, Malet Street, WC1, on May 11. It will include a display of materials being used in some British schools and colleges.

Labour studies

Coleg Harlech, the residential college of adult education is to start a one-year full-time course in labour studies in October. The course is intended to give active trade unionists and others an opportunity to study fundamental problems facing trade unions.

New technical journals

Contributions of about 5,000 words are invited by May 15 for new journals which the Institution of Electrical Engineers are to start publishing in September. Micro-wave, Optics and Acoustics and Electronic Circuits and Systems are the three new journals of specialist technical publications.

People

The reconstituted Technician Education Council which includes a proportion of new members is composed as follows: Rear Admiral J. A. Bell, director of the Naval Education Service; Professor J. Cockcroft, visiting professor of Technology, Surrey University; Mr. J. Cotton, principal, Llandaff College of Technology; Mr. P. L. Drury, principal, Chesterfield College of Technology; Mr. W. A. G. Easton, principal, St. Albans Technical College; Mr. W. B. Foster, principal, Plymouth College of Art; Mr. A. J. G. Hamlyn, principal, St. Albans College of Art; Mr. A. J. Hayward, secretary, Society of Glass Technicians.

Help for blind

The Manxman Museum in south-east London, which is run by the ILEA for the GLC, is helping blind people who attend lectures by providing artefacts to be passed around. These are specially selected for texture and feel.

Award winners

Winners of Electrical Association for Women awards include Dame Allan's Girls' School, Newcastle upon Tyne (Councillor Miss Under 16's years), Mid-Essex Technical College, Chelmsford (Worcester Vase for over 16's) and Northumberland County Technical College, Ashington (Banbury Shield, for over 16's). The awards were made on the results of the associations home electricity exams.

Degree course extended

The degree in political economy which has been running at Thames Polytechnic for five years has been approved by the Council for National Academic Awards for a further five years.

Electronic and Radio Technicians; Mr. F. Metcalfe, director, Engineering Industries Training Board; Mr. E. Mitchell, contractor, Electrical Industries Group; Mr. P. N. O'Donoghue, senior lecturer, Royal Postgraduate Medical School; Mr. R. R. Parlett, senior lecturer, Northumbria County Technical College; Mrs R. C. Platt, Secretary, Essex Education Committee; Mr. J. J. Reed, chairman, ILEA further education education subcommittee; Mr. K. Severn, chairman, Essex Education Committee; Mr. J. J. Reed, chairman, ILEA further education education subcommittee; Mr. K. Severn, chairman, Essex Education Committee; Mr. J. J. Reed, chairman, ILEA further education education subcommittee; Mr. K. Severn, chairman, Essex Education Committee.

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37-49 Riding House Street, W.1.

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Further details from: P.O. Box 20, Marylebone Road, London, NW1 8E.

Principal, Lobeuhl Hall, Peak National Park, Derbyshire S20 2UD. Please telephone 043 244.

This week in the T.L.S.

Solzhenitsyn's Lenin

Joyce's Letters

Shelley; Cabaret; Sylvia

Plath

Michael Holroyd

copyright

Alastair Forbes, C. S. Henson

The Times

Literary Supplement

on sale now

15/17

Budgeting for cuts

18

Arts features

19/22

Books; sociology; science; literature; history textbooks

23/24

Resources: toys; Islam; writing



by John Gretton, research by Lois Rodgers

Last week TES looked at the way Oxfordshire put its budget together; this week the very different way it is done in Liverpool

Liverpool's secret meetings and smokescreens:

If Oxfordshire's budget making gave the impression of a tidy and somewhat ruthless exercise in administrative planning, Liverpool's was messy and confused. In a budget that was nearly half as big again as Oxfordshire's, the education estimates suffered cuts three times as severe—£1m was lopped off, in the last minute, in an atmosphere redolent of electioneering.

These cuts were never even discussed, let alone approved, at education committee. They were agreed in principle—£1.3m cuts in terms for an extra £285,000 on the salaries budget, enabling Liverpool to improve the pupil-teacher ratio—at a secret meeting, convened by Kenneth Antcliffe, the director of education, on Wednesday, February 11.

Besides Mr Antcliffe, the following were present: John Bowen and Ian Porteous, the chairman and deputy chairman of education, Sir Smythe and Trevor Jones, the leader and deputy leader of the ruling Liberal Party, John Widdie, the chairman of the performance review and financial control sub-committee, and John Hill, the treasurer.

The purpose of the meeting, from Mr Antcliffe's point of view, was to avoid what had happened the year before, when the Liberal, in their first budget, had reduced the rates by 1p. On that occasion, massive cuts had been proposed and voted, at the last minute in the education committee itself, and these had been most difficult to implement. A cut in the Nuffield Science scheme was an example. It was the basic decision had been taken at a Liberal group meeting, without any discussion with the director—and Mr Antcliffe was determined not to let that happen again.

There was no mention of the £1.3m cuts at the education committee meeting—the last before the city council's final budget meeting—the following week. Nor was it in the treasurer's report to the pre-budget meeting of the policy and finance committee on March 1. That report mentioned the £285,000 for salaries and a further £75,000 for alterations to buildings, but all the £2m cuts proposed there were to come from other services.

It was in the course of the policy and finance meeting that Mr Smythe's proposals for a further £1.5m cuts, most of which were to come from education, were circulated. In fact, these were less than had been expected. By carefully placed leaks in the local press, Mr Smythe had fostered the impression that he was after twice as much, in order to get an equal (that is, no change) rate and have £300,000 surplus.

One way in which education was spared was by reducing the working balance to below normally acceptable levels. This balance is used to pay wage and salary increases during the year and to meet any unforeseen contingencies (such as the Houghton school, for example, a minimum staffing standard in primary schools of a head plus 1:30, it was necessary to improve the overall balance of £6m. This year, a minimum balance of £2m was required.

The other concession—which was in effect a cut—was to run down the teacher centres, cut wages to rate, and that is what the treasurer asked for. But Mr Hill was overruled by the Liberal leader, and this was cut £1.7m.

On treasury department figures, this could mean Liverpool going into the red two thirds of the way through the year—and earlier, if Government predictions on inflation turn out to be over optimistic. This would not matter much if Liverpool could rely on the rate support grant increase order halving them out for two thirds of all their inflation-induced spending. But the cash limit which the Government have imposed means that this cannot be relied on. Liverpool could be in serious trouble and be obliged either to start next year in the red or to impose an extra rate half way through the year.

But working balances are not a politically exciting subject for debate—though Stanley Muddox, by far the most vociferous of the Labour opposition members, moved an unsuccessful amendment on it at the end of the budget debate. And so education became an issue in a way in which it might not otherwise have done. Housing, together with employment (now running at more than 10 per cent), are the main preoccupations of Liverpoolians, as was confirmed a few years ago by an attitude survey carried out for Merseyside council. As it was, well before budget day on March 17, Liverpool's Confederation for the Advancement of State Education began putting out press releases, and a pressure group based on the policy technique was formed to campaign against the cuts.

Liverpool students gave themselves a day off on budget day (they called it a strike) and some 500 demonstrated outside the town hall. Some of them went inside (including Mr Smythe's two daughters, who said they were only there for the beer), so that, as in Oxfordshire, the public was represented only by an education interest group. The students were, on the whole, better behaved than Banbury mums—perhaps they were a trifle overawed by the pomp and circumstance (lacking in Oxfordshire), the dark panelling, the liveried flunkies, the glided mayor.

But, though cuts of that size must affect the services in general, it is also true that there was little, apart from £200,000 taken off the discretionary awards, in the budget or the Labour opposition amendments (which were either too general or too detailed) that they could get their teeth into.

And so Liverpool's education cuts were passed without any discussion with the elected representatives of the city. The teachers' unions had, it is true, already been granted two concessions. One was the extra £285,000 for teacher salaries. The object of this was to avoid worsening the decline in pupil-teacher ratios. To following the DBS guidelines, wanted. To maintain, for example, a minimum staffing standard in primary schools of a head plus 1:30, it was necessary to improve the overall balance of £6m. This year, a minimum balance of £2m was required.

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director of Priority in Liverpool (he has since joined Michael Young's National Consumer Council), and there was a strong feeling among heads and teacher unions that these were not being very effective. A number of teachers, they felt, were drawing salaries without doing much.

But certainly they had no opportunity to debate the cuts. Moreover, the somewhat confusing impression of administrative and political "ad hocery" which characterized the last month of budget making was there from the beginning. In the education department, it was Mr Antcliffe's first budget. He arrived under two handicaps. One was a badly fractured leg. The other was taking over from C. P. R. Clarke.

Mr Clarke was a director in the old, empire-building tradition of directors of education. One of the favourite stories about him is that he used to ride round on his bicycle looking for possible sites which the education department could buy up for schools. But one of the problems with having someone who is at the top for a long time (Mr Clarke was director for 12 years) is that the lower tiers can become rather unhelpful. So one of Mr Antcliffe's most vital concerns was to restructure the department.

Like most directors of education, he headed over responsibility for the budget to his deputy, Mr Ellery. However, in the later stages Mr Antcliffe had to become much more directly involved than he had originally intended. The first estimates were to be prepared, as recommended by council, on the basis of a standstill budget plus legally inescapable commitments, and taking into account the effects of demographic change.

Normally, this would have given the opportunity for a certain amount of switching resources within education—making some savings here in order to maintain services there, and so on. In fact, it was done on an absolutely straightforward basis, and, apparently, with a number of errors. The first time members had a chance to look at the education estimates as a whole was in a further education sub-committee on December 29. There was so much dissatisfaction with the way it had been done that the TE budget was thrown out. Further, when the performance review subcommittee came to examine the education budget in February, both supporters and detractors of education agreed that the justification put forward for, say, the £75,000 extra requested for alterations to buildings was feeble.

One of the ways in which the treasurer showed his cost-consciousness was in his monthly monitoring bulletins to the performance review subcommittee, when he set out the amount each department was (or was not) overspending. The October report showed that education, among others, was over target. So in December a general order to stop spending went out to all departments. This was taken literally within the education department: schools that might just have been retrained were refused authority to buy light bulbs.

There was confusion, too, on the overall approach to the budget. In the last 1990, Liverpool had copied the McKinsey and

Co., an American-based firm of management consultants. They produced the sort of report for which they are now known—a complete overhaul of the organizational structure with a view to implementing planned programme budgeting (PPB). A bit rashly perhaps, the Conservatives, who were in power at the time, tried to implement it, but the officers were not ready for it and it caused a lot of friction.

When Labour got back in 1971, they reversed that decision, and Liverpool went back to a pre-McKinsey system. Then came reorganization and the arrival of the Liberals. Where the Conservatives had been keen on coherent forward planning, the Liberals were more concerned with immediate financial control. They therefore went for output budgeting which they hoped would show up where value they were getting for the money being spent.

This was done for the first time last year, but the result was little more than a glorified unit cost analysis. In other words, it could be extremely useful in showing up how non-cost effective the city laundry was, but less useful for something whose effectiveness was difficult to measure, such as education—though it did, this year, show up how underused was the authority's boarding school in North Wales, Glan Alyn.

This year, the confusion was compounded by the fact that the forms on which the treasurer wanted the information from other departments came very late. This may have been partly due to the changes in the treasurer's department. But it also seems they were trying for a more ambitious manpower budget and failed to solve all the problems in time.

However that may be, a great deal more information was, in the end, put into the output budget, and rather less into the traditional input one, where the money spent is broken down into broad categories—salaries, maintenance, administration and so on. But the members rebelled at this, saying they could not understand the output budget. So, though there was an output budget alongside it, the final budget presentation was very much on traditional lines.

All this was 'time consuming and certainly did not help give an impression of overall efficiency. But that was not always the fault of the senior officers, most of whom knew what they were doing. The history of the McKinsey report shows, as at the mercy of politicians, Mr Antcliffe has perhaps not been there long enough to formulate his aims. At one level, he must be thinking about how he is going to close schools, as population goes on declining. Ideally, and in the long run, he would probably like to rationalize sixth-form provision, and introduce middle schools—though Liverpool has not yet settled down from comprehensive reorganization.

But in the short term, his immediate aim, he says, is "to make the education service credible". This means starting from scratch to establish easy working relations with the

continued overleaf

Liverpool's secret meetings and smokescreens:



continued from
previous page



● Kenneth Antcliffe, director of education, returned to Liverpool last year. Unlike Mr Stocks and Mr Hill he has moved around—Staffordshire, Liverpool, Brighton, East Sussex—and back to Liverpool. He knew all about the difference in how counties and cities are run, but was eager to come back to the hornets' nest that Liverpool has turned out to be.

A quiet, gentle man, Mr Antcliffe intervenes as little as possible in committee. He has a good working relationship with Mr Hill, and thinks it important that chief officers should maintain close contact with the ruling party caucus. But he is far from being an education hatchet man. He would like to see a national voice for education, and does not think CLEA adequate for the job. If he was convinced the AEC could do better, he would try to bring Liverpool back into its fold.



● Alfred Stocks, chief executive. Like John Hill, the treasurer, has spent most of his working life in Liverpool. His great opportunity came in the mid-1960s when he was put in charge of the team concerned with planning Liverpool's inner city redevelopment, an exercise which the Liberals are convinced was carried too far.

In his present post, he sees himself as an ex-lawyer and trainee manager. He relies most on Mr Hill, the treasurer. The important thing, he says, is to match spending to demand—and to have a proper definition of demand. In further education, for example, it was only in relation to the Albert Dock debate (see below) that he realized that student numbers had dropped from 10,000 to 4,000 without any corresponding cut in teachers' provision, he says, tends to get fixed in terms of courses.



● John Hill, the treasurer, knows what he wants and how, eventually, he aims to get it. His model is taken from private industry: production control. There is no point, for him, in planning growth rates in advance. That would be too restrictive, particularly when the object is to cut spending.

But appearances are against him. There is not only the confusion, as real as it was, that surrounded this year's budget exercise. There is his own manner. He appears to bumble. He interlaces his interventions in committee and council with as many sies as a schoolboy up before the head. It seems as though he wishes to appear a fool.



● Bill Smythe, leader of the Liberal group, runs a tight ship. He is a big man, and if he leans on you, you would feel it. His plea at the success of his smokescreen in catching his former colleagues in the Labour Party unawares was unforgotten: he clearly enjoys the rough and tumble of local politics.

His move to the Liberals paid off. Cyril Carr, the prime-mover and moving spirit of the party for many years, had to resign the leadership after a heart attack. For nearly three years now, the party have preferred him to the more flamboyant Trevor Jones. But Mr Jones has been gaining support, and anything could happen after the election.

During budget discussions, both councils were sidetracked by issues which generated a great deal of implications for the service, but were perhaps more revealing for the light they shed on the

Sixth form semantics: commitment versus constraint

A few minutes after 9.30 am on Thursday December 4 last year, Geoffrey Cross, chairman of education, set the fuse to a time-bomb which could mark the end of his local government career. Without warning, but under the appropriate standing orders, into a meeting of the schools management subcommittee, he introduced the thorny subject of the creation of a sixth form at the Warriner School, Banbury.

The Warriner is part of a complex of secondary schools centred on Banbury School. Practically all sixth form work is shared between Banbury Upper School and the technical college, under an umbrella known as the Centre for Advanced Studies. When the present headmaster of the Warriner was appointed in 1973, it was already envisaged that the school would, "in due course", contribute to the joint programme of post-16 courses.

In October, 1974, the education committee agreed the school should start a sixth form in September, 1976—but "subject to a detailed financial appraisal and eventual confirmation of appropriate allocations in future building programmes". A working party on 16 to 19 education was set up and the committee agreed last June that no decision on the Warriner would be taken until the council had received the working party's report.

The council, in the shape of Mr Cross, formally received that report a couple of days before the December schools management meeting. If the Warriner was to do any planning for the following September, a decision would have to be taken in that cycle of committee meetings, culminating in edu-

cation on January 8 and full council on February 10. Hence Mr Cross's eagerness to get the Warriner's sixth form on the agenda. But if Mr Cross had received the 16 to 19 report, there had not been time for everybody else to. Apart from the Labour opposition members, John Thomson, the Conservative chairman of the further education subcommittee, was unhappy about taking a decision that was bound to affect the technical college before the report had been studied and before the other institutions concerned had been consulted.

The working party, who had been chaired by the schools management and further education officers, had come down strongly against a separate sixth form at the Warriner. Their estimates of future demand were much lower than those put out by the head and used by Mr Cross.

Other arguments, in this and later debates, revolved round the question of cost, particularly in the light of the Department of Education and Science's remarks about sixth form provision in the September circular 10/75: the position of staff who had been taken on in the expectation of a sixth form; and whether or not other schools would seek to follow the Warriner's example. On this first occasion, the matter was simply referred, with no recommendation, up the line to the financial and general purposes subcommittee.

There had been nothing improper about Mr Cross's action in bringing the question before the schools management subcommittee. The fuse which he had nonetheless lit was composed of three factors. A lot of members felt strongly that Mr Cross was trying to pull a fast one. Mr Cross, it became increasingly clear, was also at odds with his officers over

it, from the chief education officer downwards; moreover, he did not have the full backing of the Conservative group in his attempts to override them.

The third factor lay in Mr Cross. He regarded the resolution of October, 1974, as a personal promise to the head, and as such it became a matter of personal honour and integrity. He would not, could not, compromise on that, let alone accept defeat.

But he was defeated, at the education committee meeting on January 8. The atmosphere was more highly charged than at any other meeting we attended. The debate was of a high standard and was chaired with scrupulous fairness by Mr Cross—though he lost a bit of the support that might have come to him by intervening in the debate. By 17 votes, to 16 (including Mr Cross's), the committee voted "to await consultation on the 16 to 19 report with all the institutions involved before permitting Warriner School to develop a sixth form".

The most effective speech came from Dr Harry Judge, a co-opted member, previous principal of Banbury School and now head of Oxford University's department of educational studies. Dr Judge succeeded in making those there who were a great deal to be said for both sides and yet coming down firmly against a sixth form.

For Mr Cross, the most damaging intervention was a brief one by his leader, John Francis. After quickly listing the disadvantages of the project on grounds of cost, Mr Francis said he would vote with Mr Cross, but only because he had promised to.

It was immediately clear that Mr Cross must have made it a resigning matter. At the end, in the private part of the meeting, he refused the question of his resignation, but was persuaded against it by a number of people, including Olive Gibbs. So Mr Cross stayed on—and continued the fight. Taking the literally the resolution passed by the committee, he began discussions with the governors of the schools and the college concerned.

At a final meeting on this topic on March 31, things had reached such a pitch that the paper which formed the basis of the discussion was written by Mr Cross and not, as would normally have been the case, by one of the officers. In it, to support his case, he referred to decisions taken by the education committee as far back as 1967.

That meeting supported the principle of some form of associated sixth-form provision involving the Warriner. However, it was obvious that there could be no go-ahead until September, and Mr Cross is reported to have made that clear to the head. And as was spelt out during the education committee debate, it was this September or nothing: 19 to 19 policy would see to that.

I asked Mr Francis why he had allowed Mr Cross to continue so long kicking against the pricks. He said that sort of freedom was what being a Conservative was all about. But there are rumour that Mr Francis is planning to reshuffle his team, and perhaps get rid of a rather awkward chairman of education. So that, in this case, Conservative freedom might be equated with enough rope to hang oneself by.

education savings not debated in committee

felt by his admirers—and they include many of the young, sometimes student, council—have been the first to channel despair that many Liverpoolians experienced at seeing the heart torn out of their city for redevelopment.

Housing is Mr Jones's big plank. As chairman of the housing committee, he wants money for improvement rather than redevelopment—and he wants to build municipal housing for sale. More than Mr Smythe, he has turned up at most committee meetings, even to turn up as a member, irritating even to his own supporters. He is not a member, but a member, irritating even to his own supporters. He is not a member, but a member, irritating even to his own supporters.

But his other plank is community politics.

He has set the tone for a new style of electioneering, combining a commitment to get value for the ratepayers' money with effectiveness in getting things done for his ward. This can sometimes bring himself and his followers into conflict with Mr Smythe's camp, which consists mostly of former Labour councillors.

Mr Smythe himself was a protégé of the Braddocks, Jack and Bessie, who ruled Liverpool for Labour in the postwar years rather than the chairmen of the brewery used to rule it for the Conservatives before the war. Mr Braddock was there to rule, and he would tolerate so much questioning, so much in-discipline, but no more. He was even, so

it is said, not above announcing that a vote had gone his way in committee when it in fact had gone the other way.

The Labour group is also divided—between the non-Marxists and the Marxists, and between the Roman Catholics and the others. Above all, they are elderly. There are no young faces among them, and precious few middle-aged ones. Some of them feel very bitterly about the Liberal takeover. One of the brightest of them, Dr Cyril Taylor, whose militancy goes back to being a member of the Communist Party before the war (along with Eric Heffer), cannot resist scornful references to the "pretty boys" among the young Liberals, while at the same time blaming the Labour Party for not doing what the Liberals have done.

In that sort of atmosphere, it is not surprising that political bickering and point-scoring often take precedence over serious debate, and it must often be the officers who, in the end, have to bear the brunt of this. But behind the liveliness and the mud-slinging, there is concern, particularly among the Liberals, for real issues, though it is expressed somewhat more pitifully than it would be down south.

Behind everything in Liverpool there is the feeling that politics matter. The way

the budget and education go next year, for example, could well depend, much more than in Oxfordshire, on the way the elections go. That may not be helpful, from the point of view of the long-term control of public spending. But it does suggest a lively local democracy.

But when all possible allowances have been made for the muddling and confusion and "ad hocery", how healthy is local democracy in Liverpool in the light of the following sequence of events?

● In order to avoid having cuts forced on him by a party caucus that may be more damaging than necessary to the service, the director of education calls a secret meeting.

● He then, in consultation with the chairman and deputy chairman of education, prepares a list of cuts, which do not go to education committee, but to the leader of the ruling party.

● The leader keeps the detailed proposals up his sleeve until the last possible minute.

● The result is that the only possible chance for debate is in full council when the only alternatives, as a rule, are minor amendments or throwing out the whole budget.

Liverpool: the basic facts

	1976-77	1978-77
City population	610,135	581,600
School population		
Primary	59,652	57,104
Secondary	51,175	50,851
Pupil/teacher ratio		
Primary	23.6	22.0
Secondary	17.2	17.0
Budget (£m)	£58,725	£67,811
Product of 1p rate		£905,000
Cuts in education budget: 1978-77 (November, 1975, prices)		£000s
Deletion of general contingency provision	98	
Teaching staff: reduce expenditure on French assistants, theatre in education, nursery and welfare assistants, in-service training and short courses	160	
Teachers' centre: reduce expenditure on salaries and other expenses	40	
Further education: increase fees, limit permits for attendance at outside colleges and limit the value of discretionary awards	380	

Colleges of education: general reduction of net expenditure of colleges and grants to students

Colleges of further education: general reduction in net expenditure of branch colleges, and the polytechnic and, 199 increase in income of rectorates 80

Establishment expenses: modify the allowance for inflation for postages and telephones, printing, stationery, domestic and administrative supplies; reduce administrative expenses 110

Revenue contributions to capital account: delete general provision and reduce costs in electrical works programme 203

Debt charges: reassessment of average rate of interest 84

No-area pool: reassessment of claim and of contribution for '74-75, '75-76 and '76-77 27

Transfer costs of nursery provision to social services 20

Total savings £1,388

Composition of the city council
Liberals 43
Labour 42
Conservatives 14

heat: in Oxfordshire it was a sixth form, in Liverpool a site for the polytechnic. They both had financial preoccupations and practices of local policy-makers

The jewel in the crown, or the poly in the dock?

Liverpool Polytechnic, the result of a messy amalgamation of art and technical colleges, is on 19 different sites. The Albert Dock polytechnic, a few hundred yards up river from the Liver building in the heart of the dockland waste, look like three-storey rail-motors and are thought to be a prime example of nineteenth-century industrial architecture (as if Liverpool didn't have enough of that).

So why not bring the two together? That would give the polytechnic a single, unified site. It would do something about unemployment in Liverpool by giving work to the other construction industry. And above all, it would give new life and new heart to an area that is conspicuously lacking in both. That way, the polytechnic would become the jewel in the crown not only of the local authority—an ambition that Liverpool shares with many another authority—but also in that of the city's dynamic new Liberal party.

That was the thinking behind an idea that originated in the early 1970s with two young men. One was Chris Graham, then president of Liverpool University students' union and one of the rising group of new young Liberals (BNC). The other was Ken Martin, a lecturer in the architecture department at the polytechnic, who is still there fighting for a modified version of the scheme as political and financial objections mount.

A joint policy committee were set up consisting of representatives of the poly and the council. Altogether 29 different sites were looked at for a building that could cope with 10,000 students by 1981 (the Department of Education and Science estimates current at 12,000). In January, 1973, they asked Building Design Partnership to do a feasibility study on the next best site in the centre of the city. BDP are a Manchester-based consultancy firm, founded by Professor George Grenville Baines, a friend of Harry Oddie, deputy chairman of the poly and chairman of the joint policy committee, since student days.

The scheme BDP first produced would have cost £27m at July, 1973, prices. From the council's point of view, one of the great advantages of this—or any other scheme—is that it would actually cost them very little. The capital costs are borrowed—on DES authorisation—and the revenue costs can be pooled. In this way, 95 per cent of them are borne by all the local authorities who have frequently been heard saying, "We put a lot into the pooling system, it is time we got into the pooling system." In October, 1973, the council decided "to adopt the Albert Dock site for polytechnic redevelopment". Since then, a number of things have gone wrong. Estimates of student numbers

declined, first to 7,500, now to little more than 6,000. As a result of the DES decision to merge two colleges of education with the poly—T. M. Marsh and F. L. Calder—there is no possibility of housing the polytechnic on a single site.

In January, 1975, the dock board suddenly decided to make the Albert Dock basin tidal. This meant that the piles on which the warehouses were built periodically became exposed to the air and a possible risk of rot, so that the soundness of the whole edifice became a matter of debate.

And meanwhile costs kept rising and the DES kept dithering. Estimates of a vastly scaled down project, splitting the work between the two sites, still came to around £25m at December, 1975, prices. Despite a delegation to Elizabeth House last October, the DES would still not say whether they would authorize a start on this project.

The performance review subcommittee set up a working party in November to look into the question. The main element in this was a paper by Kenneth Antcliffe, the director of education, which argued cogently against the whole project. But there was a counter attack from the polytechnic. Mr Martin drew up a much cheaper scheme which would have involved using only part of the warehouse buildings. This was put to a meeting of the further education subcommittee early in January, who suggested that BDP be asked to comment on it a week later at the education committee.

BDP duly appeared, with a team of four. They spoke to their own modified scheme,

and criticized Mr Martin's proposals. But the audience had the impression their heart was no longer in it. The education committee did not really make a decision. They reaffirmed their faith in the Albert Dock as the major site for the poly; they suggested that BDP consult further with the polytechnic's department of architecture; and they recommended that negotiations to buy the site go ahead with the Mersey Docks and Harbour Company. The object was to try and get the price down from £2m (could the company possibly hope to get that from anybody else?).

If anything, the DES have added to the uncertainty by finally making up their mind. In a letter to the director, dated March 19, they authorize £3m-worth of building to start in the current financial year, as the first—and possibly only—phase.

In his report to the working party in November last year, Mr Antcliffe wrote: "If the DES allocate to the authority capital resources to enable Block D for the Faculty of Art and Design to be built as a first phase of development on the site, it is more than likely that this part of the polytechnic would for a considerable time stand in isolation from the rest of the polytechnic, and this would be a very undesirable state of affairs." The Minister had, in fact, told him that it might be 30, 40 or even 50 years before plans for a unified site could become a reality.

Last week the city council narrowly decided not to purchase part of the site for the poly. That ought to mean the issue is closed: no docks for the poly. But in Liverpool nothing can ever be quite so certain.

18

Not so much a Festival...

Stewart Trotter reports on student drama in Edinburgh

By far the most exciting event of this year's National Student Drama Festival—held for the first time ever in Scotland—was 7:34's production of *Yobbo Now* by John McGrath. It tells the story of how an "ordinary" mum gets rid of her slob of a husband ("I had a little weep—well it only seemed fair to him to have a little weep") and starts to live. She dazzles and shines her way through her new adventures—and starts to put the "right" questions to herself. Why is it, she asks, that seven per cent of the population own 84 per cent of the wealth? And why don't we all get together to change a system which must be wrong? This clever, insidious little show uses all the cheap tricks of the commercial theatre to make its points—including a full-blown star performance from Hilson McRae. And it has enough charm to turn the most hardened Tory pink at the edges.

This is a professional production—and it's unfair to compare it with student shows. But it had two qualities that were hardly to be found in the rest of the Festival—joy and commitment. Of the 14 productions, only one could be described as political—Marowitz's dubiously-inclined *Palach*. And the director only chose it because he thought it was a good vehicle. You could see him getting anxious if the conversation veered away from the production to the problem of *Palach* himself. Still, this was a good deal better than a production of *Old Times* by Harold Pinter that retreated from life altogether. It became a dry little lecture on itself—and threw into the play bits of Joyce, Mozart and Wagner for exegesis.

So let us be thankful for the intention behind Peter Barnes' *Leonardo's Last Supper*—to celebrate living. The trouble was, I found the parody so desperate—and the plotting so weak—that the play, like the savdust on the floor of the set, started to get up my nose. If you have Leonardo da Vinci lying dead in a charnel-house, the only thing you can do is bring him back to life. And when you have brought him back to life the only thing you can do is to kill him off again. Peter Barnes makes all the expected money versus art remarks when the charnel-house keeps circling in for blood—and ends his play with a piece of romping anachronism that had me rushing for the door.

David Seabourne's *The Play of William Cooper* and Edmund Daw Nevill, presented by the Cambridge Mummies, also tried to play too much on my good nature. I refused to identify with some grinning, wide-eyed, pastoral innocent. And when Willy boy discovers sex I cannot believe it's the end of him. This evening passed me right by.

The only show that I could wholeheartedly admire was Phil Young's production of *Gas*—German expressionism as it comes. Mr Young has obviously seen the odd Fritz Lang movie—but he has come up with an entertainment that is intriguingly original—and a bit spooky as well. He switched off all the lights in the Traverse Theatre—and had micro-lamps on their helmets—bessing us around in the dark ("Sit in the top, bottom and middle rows"). At the interval of Georg Kaiser's story of industrial explosions and unrest we were marched out of the theatre and down the road to another hall for the second half of the play. The Edinburgh police—who were helping to keep us in order—seemed even more sinister than our own fascist guards. All through the rest of the play we were forced to stand on platforms, while the evening progressed advanced on us and dragged us, mentally at least, into the riots. Dazzling lighting and stunning designs knocked our sensibility even further on the head—and we emerged exhausted but exhilarated.

In terms of "messages", Kaiser is hopelessly naive. He wants us all to leave the factory floor and make for the woods and the fields. But he has provided a source of energy—not gas—for this year's festival that has not been found in the new plays submitted for performance.

Frank Oates's *A Terrible Beauty*, for example, was a great disappointment. Mr Oates is serving a sentence in Wakefield Prison—and, as his play is set in a South African jail, I had hoped for some real observation. But the dialogue he gives us is amazingly bogus. Guards wander round making remarks like "A man is a man, black or white"—and the hero, excellently played by Phil Reaube,

hardly rises to Max Bygraves's level with his "Life's a game of cards". But Mr Oates has realized that one of the most important functions of the theatre is to tell a story. So the guards on death duty come and go—and a genuine tension is created.

Not so with Jacek Lakowski's *Galatea*—a clever script that kills itself with its own literacy. Miriam—the play's central character—goes on and on about herself—with over-diminishing returns. She has been created by two brothers—her husband and her lover—and though the image she has been given is false, it is the only one she possesses. An interesting idea, perhaps; but Mr Lakowski lets his character talk about the problem too much without showing it in dramatic action. The only thing his characters are allowed to do is wander aimlessly round the furniture.

No less vague in its staging—but thrilling in its impact—is George Mackay Brown's *The Stormwatchers*—a show by Strathclyde. A group of seven Scottish women are mourning their menfolk, drowned at sea. But what emerges, sadly and strangely from their lament, is the distance they felt from their men in life. Death only confirms separateness. Occasionally, Mr Brown shifts into banality—the "cruel sea" gets mentioned more than once. But this is a small price to pay for such breadth of vision. He can sweep from the epic grandeur of "Mermaids, whales and drowned ships" to the chillingly particular "sour, chaste hands" of the community's joyless splinter.

Coup d'Etat by Paul Bream is an accomplished and diverting little play about the ghastliness of media-folk. A Christ-like terrorist comes to spend his last evening with a documentary producer and his wife—he will commit suicide to camera clicks and videotape. You've probably guessed the ending already—so I shall move on to Robert Pugh's *The Key*, which I don't like as much as every-one else. It is an effectively macabre story about corpse exhumation among the bog- Irish—but I don't feel the author was compelled to write it; it reads like a technical exercise.

As I said before, there was very little commitment in this Festival—which is probably why I enjoyed Jack Strayan's performance in *Swainsong* so much. Of course, no young actor could hope to capture the full resilient absurdity of Chekhov's old man playing through the classics. And Mr Strayan played for whimsy where I think he should have gone for farce. But here was an actor who was using the drama to tell us something about himself. And I was deeply touched.

But most of the students described themselves as in a floating, listless state. And they were certainly hard to provoke. Radio pundits and telly-persons were offering lots of rude comments about their shows—but the students took it all calmly and reasonably. Martin Esslin—in an engagingly provocative talk—was driven, in the end, to ask exactly what was going on in everyone's head. "Nothing" was the disarmingly frank reply from some sections of the floor. There seemed to be nothing to fight against. It was particularly appropriate that Ken Ross's fine new script *The Death of Private Rowland* should be performed—in a rehearsed reading—that evening. It's about an American boy who wants nothing and feels nothing. He ends up by joining the army. The hushed concentration that fell over the audience when the boy is seduced into wearing a uniform shows, perhaps, where the fears—and preoccupations—of the present generation of students lie.

At the end of the week, the Festival prizes were announced. Apart from the award to Phil Young for *Gas*—and to his clever designer Hannah Willets—they did not seem to bear any relationship to anything. I wonder what a good idea to give them all out every year? Also, award by committee seems a ludicrous—and slightly sinister idea. It means that students cannot clash with Festival notables without fear of losing favour. Why not give the job to some highly idiosyncratic—but powerfully-minded—individual? Theatre, as we all know, is a matter of taste—this way it could be seen to be such. It's much easier to rage against a single man than a committee. And I'm sure it's nearer the life of the drama.

"*Palach*" was presented by Durham University, "Old Times" by East Anglia, "Leonardo's Last Supper" by Strathclyde University, "The Play of William Cooper" by Cambridge Mummies, "Gas" by Leeds University, "A Terrible Beauty" by Bangor College of Education, "Galatea" and "Swainsong" by St Andrew's Mermaids Dramatic Society, "The Stormwatchers" by Strathclyde Theatre Group, "Coup d'Etat" by Keele University, and "The Key" by Ross Bruford College.



Left:
A scene from Robert Pugh's
'The Key'.
Below: Kevin White in
'The Key'.
Bottom:
A scene from Phil Young's
production of 'Gas'.



19 Books

Living and partly living

George Hill on medical sociology

An Introduction to Medical Sociology. Edited by David Tuckett. Tavistock Publications £9.00. 0422 74510 3. Paperback £4.50. 74320 8.

The Reorganized National Health Service. By Ruth Levitt. Croom Helm £6.95. 85664 278 9.

Rationing Health Care. By Michael H. Cooper. Croom Helm £4.50. 85664 216 9.

Although the book appeared just before the sordid goings-on at St Augustine's mental hospital in Kent, it made public a few weeks ago, *An Introduction to Medical Sociology* has whole pages which can be read as a commentary on what went wrong there, point after point. It took no supernatural insight—the whole pattern of parsimony, stagnation and cruelty has grown all too familiar in the past few years—but the coincidence strikingly illustrates the way in which such cases spring not from any distinctive villainy of

the people involved, but from the way human nature tends to respond to institutional stress of a particular kind. Like a disease, the effect is predictable (though, like a disease, only broadly so), and should be open to systematic study and treatment.

Most comment on the St Augustine case has concentrated on the lessons to be drawn from it in terms of large-scale administration and public spending—both matters well within the province of sociology. As it happens, the discussion in the book turns towards the small scale, and the difficulty of maintaining goodwill and enthusiasm in long-stay wards where the normal incentive of looking forward to a cure for the patients is largely absent.

It is a problem of much wider importance than it might seem. The book refers to the human need to set targets and work towards them, and sensibly concludes that nurses should set small day-to-day targets for themselves and the patients and keep up their interest on that.

Sensible—but no more so than any good ward sister (and not so sensible if the targets tempt nurses

to harass the patients into continence and tidiness). There is a tendency for the contributions of sociology to look more like truisms the nearer they get to the particular. On the grand scale, the process of generalization is more impressive, and, of course, indispensable whatever its shortcomings. At the lower levels—in its analysis of the interplay of motives between doctor and patient, patient and family, or hospital and different groups of its own staff—it is full of illuminations, but short on precision. However, it may serve to instil a vague but salutary impression among doctors and planners that such things are never as simple as they seem.

The book claims to be an introduction but not a textbook. It looks rather like the latter, with six-page bibliographies after each chapter, and scarcely enough room at the margins for a ladybird to walk down and keep its feet clear of the printer's ink. It is full of bracketed acknowledgments to Tansley, up-to-date and tidy guide (not immaculate, unfortunately: the table on page 142 seems, on the most favourable of several possible interpretations, to credit the hospital service with twice as many

methods and principles of sociology as it claims). But she touches in passing on the controversies of the moment and, like the authors of the sociological work, tends to lean towards what is beginning to establish itself as the prevailing critique of health provision in Britain.

The outline of the position, presented most fully, perhaps, by the Centre for Studies in Social Policy and widely accepted even within the service, is that the NHS is too much concerned with cure at the expense of care and prevention, makes its plans on little more than a hunch, and behaves as if it is able to do much more than it really can. Michael H. Cooper, an economist, makes similar charges in *Rationing Health Care*. Less inclined than the sociologists to glory in picturesque diversity, he still has some hopes of the new administrative structure and a hearty mistrust of the use doctors make of their clinical discretion. It is probably an approach better suited to a time of unpopular decisions, like the present. But in an organization so resistant to imposed change it is not likely that any reforms will get far unless they first of all gain acceptance from the doctors.

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Philosopher King

Andrew Robertson on Keynes

Keynes. By D. R. Moggridge. Macmillan £6.95. 333 3979 2. Fontana Paperback 95p. 00P 634193 4.

One wonders what John Maynard Keynes, economist, would have made of this price differential of £6 between identical texts because one is bound in boards. When one has read Professor Moggridge's entertaining and lucid biography, the likelihood arises that the great man would have advised the buying of the paperback and the spending of the 16 on tickets to the ballet.

Equally interesting would have been his comments not only on the current economic policy, but on the current situation of capitalist nations wherein high unemployment and zero growth accompany a rapid rate of inflation. It is no use our referring to the great tract, *The General Theory of Employment, Interest and Money*, alone, for to some extent it was influenced by the so-called great depression of the 1930s. The Keynes described in this book would have thought the basic factor for his mind was flexible and his approach empirical.

For those who have not read a book of Keynes, this is the ideal introduction, placing the right emphasis on the influence of Maynard Keynes on the Cambridge of his mentor at Cambridge, of his father, philosopher and economist, and the Bloomsbury group (here barely touched upon, but above all his long and varied experience as a teacher, civil servant, statesman and financial maker, both at the Bank of England and at the Treasury).

He had a remarkable career, being mathematics with apparatus, a classical ease, then turning to economics when it was known that the political economy and the social sciences were being revolutionized. Whatever may have been said of his influence on economic policy, those who disapproved of his *Economic Journal* at 33, a Commissioner (Indian Currency and Finance), at 36 the Treasurer of the League of Nations, and at 40 the President of the Royal Society, after which he resigned, published his critique of that organization, and the consequences of his work, of which Schumpeter wrote later in an obituary, it was with a reception that makes his work sound common-sense.

His *Tract on Monetary Reform* appeared in 1923 when he was just 40. In it appeared the famous dictum that "the long run is a misleading guide to current affairs. In the long run we are all dead."

Adding that economists were useless if they could tell us what was what when the storm was over the ocean would be flat again. There was a time in his life when he regarded his contemporaries in economic theorizing as no more than weather prophets trying to monitor and report on the vicissitudes of the trade cycle. It was this bluntness that gave rise to the view that he was opinionated and even arrogant to the point of rudeness. While that might have seemed so to individuals who took issue with him, one of his underlying characteristics which

persisted throughout his life was his concern for human welfare.

His regarded inflationary policies as unjust (which they are when you consider how they advantage the owners of real estate, to take one example), and definition as "inexpedient" and worse than inflation because "it is worse in an impoverished world to provoke unemployment than to disappoint the rentier". He wrongly foresaw a post-1945 depression, which he calculated could be alleviated by repayment of forced savings (Post War Credits, which in fact were not repaid, except to old age pensioners, for more than a decade). But it was his basic thinking that underlay the Beveridge Plan for national insurance, family allowances and full employment. Beveridge's own book,

Full Employment in a Free Society, relies very much on Keynesian thinking, but that is not claimed by his biographer.

To Keynes, for better or for worse, we owe our modern system of economic management, which became feasible only after national accounting statistics were made available. (It is strange to realize that at one time Treasury policy was based only upon Internal Government data and, of course, the Bank of England worked on separate lines except for Bank Rate fixing). Throughout the 1930-45 War he was an unofficial but often decisive voice in fiscal policy. He was, however, frustrated by the decisions of the politicians at Bretton Woods concerning international finance. This was in 1946, the year of his death, so that

controversy is not described here, although we are given an interesting, if depressing account of his similar frustrations over reparations. He was very much opposed to the Morgenthau Plan to turn defeated Germany into a non-industrial economy, and disapproved of the early and vindictive sounding heavy reparations plans.

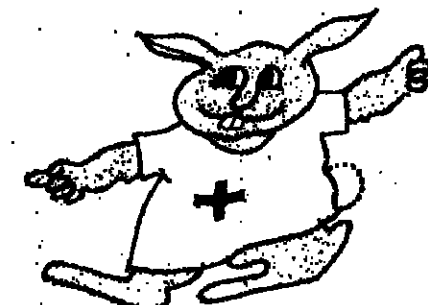
He was 63 when he died, Lord Keynes, member of the Order of Merit and Fellow of the Royal Society, two honours which came to him at the eleventh hour. His was a rich, exciting and useful life, of which we see only one aspect fully in Professor Moggridge's version; but it remains a satisfactory account because of its concentration on Keynes as "Philosopher King" and capitalist revolutionary.

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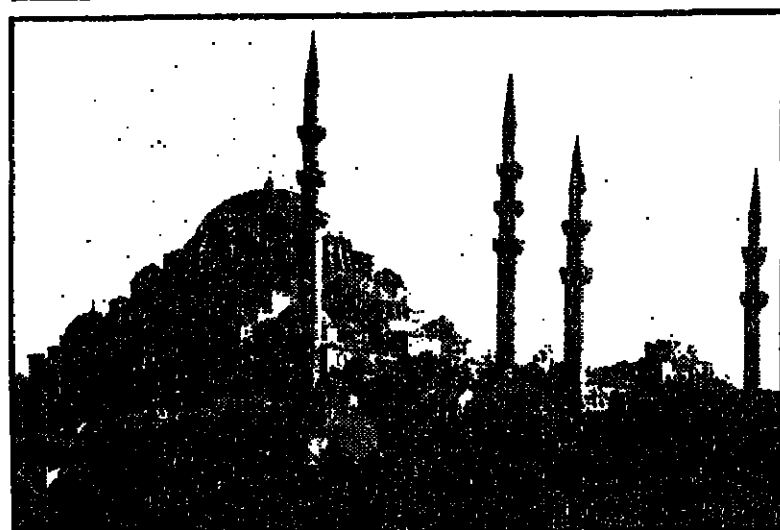
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Achievements of Islam

by Colin Alves

The World of Islam. Juckdown no 143. By Richard Tames. Jonathan Cape £1.25.

It was inevitable that the Festival of Islam would stimulate the production of educational material in this area—and one is grateful for it. One danger of such an event, however, is that publishers are so anxious to have their material out in time that worthwhile projects are marred by hasty production.

This is, presumably, what has happened with this new Juckdown folder. It contains plenty of good material, and gives a wide-ranging account of the achievements of Islamic culture, particularly (though not exclusively) in the past. But the faults in presentation in the end outweigh the value of the content.

The first cause of frustration is the new Juckdown format. The old firm card envelopes have been replaced by a plastic envelope (fine in itself) with a colourful wrap-around sheet containing notes on the nine exhibits nestling inside. In only four unwrappings and rewappings the contents began to disintegrate.

The other faults arise from the compilation of the material. Exhibit one (despite its format) is virtually an extension of the notes

rather than an item for display. Exhibit two, a page from the *Koran*, is visually impressive but the notes on it can only be fully understood after reading exhibit eight. Exhibit three consists of a set of maps whose historical relationship is obscure. Exhibit four, a souvenir of the hajj, is not adequately explained by the first item even though the notes claim that this is the case. The section on mosques, publications only by the fact that it characteristic simplicity of Islamic worship, but then emphasizes the great mosques of the major centres.

Irritating as these detailed faults are, there is a more fundamental criticism. The more successful Juckdowns have usually contained a large number of real items (copies of original documents, etc.) in *The World of Islam* only two such items appear, neither of which is adequately annotated. The rest of the material is virtually "book-material", distinguished from more conventional publications only by the fact that it is presented as "exhibits". And yet the two items (on art and science) which are perhaps the most acceptable in content (apart from some odd choices of illustration) are produced in a two-sided format which prevents them from being displayed in the same way as the other seven items. It is all very disappointing.

The BBC at the BM

The British Museum's spring festival of art films from the BBC archives continues until the end of April. Among the 15 films are two by Dr Roy Strong on the portrait of Henry VIII and Elizabeth I; a survey of English watercolour painting by Basil Taylor; films on the work of Goya and Dürer; three programmes from Lord Clark's *Civilization* series; and the late Dr Jacob Bronowski's study of Leonardo da Vinci.

The films are shown in the British Museum lecture theatre at 11.30 am and 3.30 pm, Tuesday to Friday, admission free. The British Museum is in Great Russell Street, London WC1B 3DG, telephone number 01-636 1555.

Computing pioneers

The History of Computers is the subject of a wallchart produced by SM UK Ltd with the Science Museum. The chart follows the development of major computer manufacturers in the UK, America and Germany, and of their products. There are descriptions of computer pioneers and important machines such as Pascal's accounting machine, the Arithmometer, differential analyser, valve, transistorized and integrated circuit computers.

The research for the chart has been carried out by Jane Pugh, of the Science Museum, and Maurice Cook, a technical design consultant on secondment to the museum from IBM.

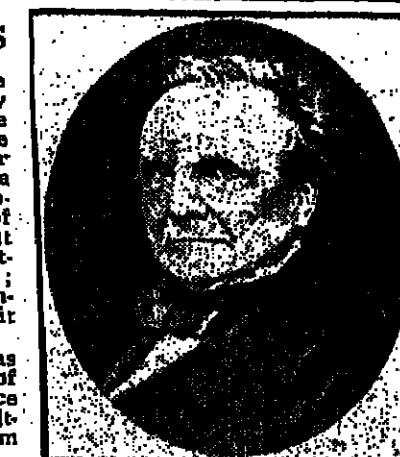
The History of Computers wallchart costs 50p, plus 22p postage and packing, from the Science Museum, Exhibition Road, London SW7.

Hatfield creativity

A wide variety of crafts will be demonstrated at the Living Crafts 76 Exhibition which takes place at Hatfield House from May 6 to 9. Among these will be gold and silversmithing, sculpting, carving, embroidery, glass blowing, enamelling, lace-making, screen-printing, weaving and spinning. In addition many crafts will be represented which are impractical for demonstration.

Admission to the exhibition costs 70p for adults, 35p for children, and this includes admission to Hatfield Park, gardens and car parks as well as to all demonstrations. Hours of admission are 11 am to 6 pm.

For further details contact the Administration Office, Hatfield House, Hatfield, Hertfordshire, telephone Hatfield 62823.



Charles Babbage spent much of his life planning a mechanical Analytical Engine, now regarded as an early ancestor of computers.

Pretend you are a jockey or a friendly, big brown dog

by Jennifer Gibson

The Writing Centre Second Edition. Grande Publishing: Hart-Davis Educational, P.O. Box 9, 29 Frogmore, St Albans, Hertfordshire AL2 2NP. £5.95.

The Writing Centre is a kit of 40 cards which, it is suggested, is suitable for use with eight to 11-year-olds of average ability and for less able secondary pupils. The cards are relatively sturdy and brightly illustrated, with about half a dozen questions or statements printed on each, suggesting creative writing linked to the pictures.

The publishers say they can be used where a teacher is arranging a creative writing centre. A small group of pupils could discuss the ideas suggested by each card and this should help them to develop listening and speaking skills, and encourage them to express themselves in writing. The kit, it is claimed, is based on the premises that all pupils have ideas and feelings which are worth expressing and that, generally speaking, one learns to write by writing.

If this is the intention, it is surprising that such well-worn themes are also a long way from many children's experience. As well as the familiar mystery and adventure categories, there are the inevitable animal topics: "You are a friendly, big brown dog" or "You are a mountain lion", as well as suggestions for fantasy writing, demanding identification with treasure hunter, or a space traveller, or a police inspector, or a jockey, or a traveller in a lost, prehistoric world.

Such topics demand a huge, imaginative leap from most children's everyday experience—and unless

the writer is exceptionally gifted or is given careful help and guidance—they could easily encourage secondhand versions of other people's stories.

The instructions on the cards which might, perhaps, have avoided this are rather curt: "Write about it" or "Express your opinion on paper". The questions sometimes seem designed to provoke brief answers. One sequence, related to a brightly coloured painting of a child looking over an orchard fence, reads "What is happening on the other side of the fence?" "Is it interesting?" "Is it funny?" "Is it frightening?" "Write about it."

Such brevity is insufficient for genuinely thoughtful, sensitive writing rooted in personal experience or imaginative observation. On the other hand, two cards on writing cinquains seem to encourage a sense of form in poetry, and the four cards on limericks are fun to use. The colourful illustrations and photographs are appealing enough to make children in the suggested age range. The topics are so familiar to the less able secondary pupils that even the attractive presentation cannot really compensate for the staidness of subjects, such as time-machines, genies or magic powers.

The kit provides a variety of topics attractively presented for discussion and creative writing, but the teacher must make sure that this writing is not to be derivative or hackneyed.

Closely observed play

by Andrea Clifford

Early Learning Activities, slide sets. £2.16 each. Educational Productions Ltd, Bradford Road, East Ardsley, Wakefield, Yorkshire.

Each of these sets contains 12 slides collected from four areas, and presented in a two-sided format which allows discussion of the material in four different situations: woodwork, junk and collage; paint; imaginative and home corner play; and play dough. They are designed essentially for training play group leaders and nursery nurses.

These slides, it is emphasized, should not be used as a substitute for students' own observation in play groups and nurseries, but as a supplement and a stimulus to discussion. The shared viewing of the slides, it is hoped, will provide a common experience and point of reference.

Adults are shown involved with the children to encourage discussion of the adults varying role, both in the play group and at home. Each set is accompanied by a purposefully brief book of notes.

Although attractive, these slides

would be rather cluttered. They would certainly provide stimulus for discussion, but the text tries to combine several aims and does not fully succeed in any. It jumps from simply looking at the materials to discussion on how the children are using them. Some of the comments are bizarre: "The addition of cutlery and full sized cups... makes play more real". When is play unreal?

Slide 11 in the home corner set depicts "the masculine role": "boys need big equipment to construct their imaginary situation and to enable them to show their strength" which seems an inexcusable perpetuation of the stereotyped sex role. Girls have an equal need for imaginary situations. As for hats and helmets help them to construct their growing image—are we to suppose that the children are at present in a state of suspended animation?

However, not all the comments are as disputable as this. The painting set, for example, has a very useful picture of a left-handed child painting. The slides are an expensive way of providing discussion material.

Judaica boxes

by Douglas S. Charing

Since they started in January, 1974, the Jewish Education Bureau, based in Leeds, have dealt with more than 1,000 inquiries. The bureau has been from those engaged in religious education, teachers, heads of department, advisers, H.M.s, directors of religious centres or teachers' centres.

The bureau offer a comprehensive selection of resources for the teaching of Judaism—books, audio-visual aids, such as films, records and posters. They publish the following: A series of five wallets dealing with Jewish Festivals, Jewish life, *Lifetime of a Jew*, *Shema*, *Books*, and a general one, *For 50p* the teacher gets a variety of information on many different aspects of Judaism.

Insight, a term magazine, giving information about forthcoming events; an article on an aspect of Judaism; reviews of books and audio-visual aids.

The JEB Judaica Kits, which provide the ceremonial objects used in the synagogue and home. Each kit has notes on the history and use of the item. These kits were intended for teachers' centres and museums, but have been bought by many schools and colleges. The first kit was compiled for the Department of Education and Science as a Judaica box.

The JEB run an advisory service which helps teachers with questions, and advises on syllabuses, especially for CSE and GCE in religious studies. Synagogue visits to religious centres, and visits to synagogues, are arranged by the bureau. The director of the lectures extensively to RE resources throughout the country and direct courses on Judaism for RE education authorities.

Local schools and colleges can take advantage of the annual Jewish books exhibition held in Leeds, and other visits are organized during the Festival of Tabernacles. A permanent display of material is on view at the synagogue for visitors to browse and purchase.

The JEB work closely with the education department of the Jewish National Fund; the Jewish Information Service (of which I was the first director); the education department of the Board of Jewish Deputies; the British Jewish Council of Christians and Jews and the Christian Education Movement. They aim to give a balanced picture of contemporary Judaism and include the point of view of both Orthodox and Progressive wings.

There is no doubt that the JEB are contributing to the pluralistic approach to RE. They are not just another agency who duplicate the work of existing organizations, but rather complement them by lack of Jewish agencies, limited by lack of money. As well as their British contacts, they have received inquiries from Eire, North America, Australia. Any RE teacher who sends for the publications (please enclose a stamped addressed envelope) to: Jewish Education Bureau, 5100, Roman Avenue, Leeds LS2 2AN.

Book Department, 8 Westwood Avenue, Leeds LS2 2BS.

Slaughter House Down

Geoff Tomlinson

But I was thinking of a plan to paint one's gaiters green, so much the colour of the grass. That they could not be seen.

(Lewis Carroll)

"Anyone for scrabble?" asked Nutmeg, scratching his left buttock with his right forefinger.

"Push off!" murmured Thistle. "You see we're multiplying?" "But what is scrabble?" inquired Stinkwort. "I've never played it."

Thistle glanced down at Stinkwort, disdainfully and rubbed a piece of embolus playfully against her nose. "Nutmeg's always reviving these traditional warren-games. Take no notice."

At that moment Earthquake sat up, shivering, as though he had scented trotskies.

"What is it?" asked Nutmeg, always alert to Earthquake's tremors. "Think. It's here again," whispered Earthquake. "I'm sure I saw it just before morning food."

"Are you sure?" asked Nutmeg. "No," said Earthquake, "but it was like this last time."

"What was like this last time?" asked Stinkwort.

"It had the same breedthover!" said Earthquake.

"Are you sure?" asked Nutmeg. "No," said Earthquake, who by this time had reverted to nibbling at a clump of speedwell he had discovered under the freshly budding blackthorn.

"You must be imagining things. Come on, Earthquake, let's have a game of scrabble."

"Sorry, I'm busy," said Earthquake.

Nutmeg wrinkled his nose angrily and began thumping the earth slowly.

"What's keeping Thrice?" he said, through his teeth.

"I don't like it," said Thistle.

"This is a bad country for foxes

and weasels. Anything could have happened. Besides, these foreign rabbits aren't to be trusted. Last night they took us about their two-mile lettuce limit. There may not be enough food here."

"Their Owsia, Enoch, thinks we should be sent back to Spalding," said Stinkwort, plaintively.

"What bothers me," said Thistle, "is who's going to organize a council if Thrice doesn't come back?"

"I always said Thrice was disappointed," when Scratcher was elected," said Nutmeg.

"We shouldn't allow does to sit in council," said Thistle bitterly. "All this talk of does discrimination. We were made to breed like rabbits, for Frith's sake!"

"Never mind that; can't be helped," said Nutmeg cheerfully. "Come on let's have a game of scrabble."

"What is scrabble?" asked Stinkwort.

"To Dorset with scrabble!" shouted Thistle. "It's nearly bed-time, and here we are nibbling away as though we had all the feathers on the dandelion. If something

Ideas, argument, experiences, research

Music for all

Paul Farmer

The fact that music is not a popular subject in schools can be established just by looking around them. The number of children really involved in music departments is usually so small that it hardly justifies the number of staff employed, especially bearing in mind the favourable pupil-teacher ratio produced by the small groups taught by visiting instrumental teachers.

Outside school the situation is similar. How many children ever go to a concert or spend their money on anything but pop records? However dubious these criteria, it is obvious that school music has failed, and in times of growing public accountability we may wonder how much such a subject can last.

Perhaps the most convincing evidence of the failure of this subject to develop during recent years may be found by looking at examinations. Many GCE boards have never asked for practical evidence of musical ability in their examinations, nor granted partial exemption to the most brilliant performers. Though this is slowly changing, the examinations have for a long time restricted fourth and fifth year music in schools and because of their highly academic nature have forced selection upon the subject after the third year.

Although CSE boards have had a much more practical approach, it is the very small number of Mode 3 courses running that show how little the subject has been developed. It is assumed that compar-

ative numbers of current Mode 3 courses in different subjects bear some relation to their respective development, then it is clear that few teachers have bothered to do anything as far as music is concerned.

Nevertheless, any solutions offered still have to cover the inherent problems in this subject. To many other subjects it is easy to imagine a class of pupils of very different abilities and interests each occupied without necessarily having to interrupt or disturb others. A lot of noise in an art lesson for example will not stop individual work.

Music, however, is obviously a subject where noise is an immediate problem, which is one reason why group activities such as singing have for so long dominated the music classroom: however desirable such an activity may be, it cannot cope with individual needs.

Though individual music making is to some extent possible with mixed ability classes, there can be many problems. One solution is the extraction of small groups of pupils along the lines of instrumental teaching, but on a fair rota basis so that every pupil can take part. Most authorities have schemes whereby schools employ visiting instrumental teachers: the full-time equivalent of these would distribute teaching time far more fairly by taking the groups out for two or three weeks at a time. The pupils would return to class lessons not only having had an almost individual experience of making music, but would surely contribute far more to class music making as a result.

Back in the classroom there may still be the problem of what to do when not playing. One way in which listening for mixed abilities may be created is by using as many cassette recorders with headphones as the school can afford: this is perhaps the most useful and adaptable resource now available to the music teacher. However, if schools have the practical needs of their pupils satisfied in the way I have suggested, they may feel justified in working in other directions for the rest of the time perhaps by thinking with other subjects. Carefully prepared workbooks, for example, are a good way of getting pupils to practise the skills of literacy and of autonomy through a subject such as pop music, in which many of them are interested.

The real aim of music teachers must be the provision of music for everyone. The inescapable fact that we, too, must provide for every interest and ability at once must be foremost in our thoughts. This means that all pupils, not just the privileged few, must be given the opportunity to learn an instrument or to play in a small group, and that suitable music courses must be made available to all fourth and fifth year pupils.

If present exams are unsuitable for most of our pupils, we must create our own: we cannot deny music to a child just because he is not interested in the examiner's conception of the subject. If pupils are as disenchanted with school music as they appear to be, then it is our duty to find methods of achieving them that are wrong.

Paul Farmer is head of music at Holland Park School, London.

young rabbits gathered round him, thumping the ground in excitement and relief.

"Where've you been, where've you been?" they shouted. "And what was that terrible noise?"

"I don't know, no dears," said Thrice, "but I think it had something to do with this. I saw a group of men getting excited about it."

The rabbits gathered round close to look at the scrap of paper Thrice had dropped on the grass. On it there was a picture of what looked like a great white bird. Over the picture were some strange scratches like this:

AT LAST: CONCORDE GETS OFF THE GROUND. . .

"But what does it mean?" asked Thistle.

"Shush!" said Nutmeg. "The council will decide. No need to wiggle your tail. Come on, let's have a game of scrabble."

"But what is scrabble?" asked Stinkwort, sleepily. "I've never played it."

*The stress is on "hov". Literally, sight-of-the-wind: a sense of uncertainty.

†Barbed-wire.

Work for each other

Ann Lewis

Last April I wrote an article for the Forum page, "A Child's Eye View". I explained the difficulties faced by children in my class of six to seven-year olds in an urban school, where trying to envisage life in the countryside, and most had no television, stories and advertisements. I asked any teacher in the area who was interested in corresponding with my class to contact me.

As a result of the article we have been corresponding regularly with classes in rural schools. The schools are widely scattered across the country, from Deanshott to Canterbury.

Exchange of work began last summer term. At first we sent stories, pictures and photographs about the children, the school and the countryside. We received a lot of letters from those who actually lived on farms. One child wrote "My dad goes to a farm to work. He milks the cows." Another wrote about her animals: "We have cows and horses and some ducks and a little foal and we have got three dogs."

Children who had never been outside the industrial area of the West Midlands were intrigued by accounts of children their own age

going to market to sell calves, helping with milking or driving a tractor.

Later that term we sent materials on farm visits and received from the rural schools details of their trips to, among other places, Dunsen Castle and Mallock aquarium. Several of the teachers were very generous and sent us large parcels, including birds' nests, jars of pond water, a sheep's head, a collection of rubbish from a local beauty spot and assortments of leaves and wild flowers. These were part of a display in our hall which proved a talking point for children, teachers and parents. This display was later supplemented by an interesting project from a Kirby-in-Ashfield school in which they had carried out a great deal of number and

measuring work in and around their village.

During the autumn term material sent by us included pictures and accounts of a local fair, a school traffic survey, walks along a disused canal and descriptions of local industries. We received pictures, tapes, stories and project books about country walks, black-berrying and harvesting, which the children found very stimulating. As Christmas drew near we exchanged cards and letters about school activities.

This term we have heard in particular about the storm damage and snow drifts. Snow was "one metre deep" wrote a boy in Bedfordshire. We responded with work about the building of a new nursery unit near the school, with vivid details of "Workmen come and go" and the concrete

mixer which "mixes the cement up and tips it out onto the ground".

My colleagues and I feel that this is an extremely valuable exchange. The children have been stimulated in their own work, interested in a different environment and fascinated by many of the strange objects received. We have found that even the five-year-olds now have a more realistic picture of rural life and an enriched vocabulary. The staff too have found it rewarding and plan to continue. Several are hoping to arrange a visit to the school with which they have exchanged work.

I would like to recommend this rural-urban interchange as a valuable tool in language development.

Ann Lewis teaches at Mossley Infants School, Blaxwich.

Polystyrene lens



A new hand magnifier, of which the lens, frame and handle are a single polystyrene moulding, has been introduced by Combined Optical Industries, of Slough. They are marketing the 6cm (2 1/2") magnifier under the trade name of Opto.

The lens gives a magnification of around 2 1/2 with quite good definition. The magnifiers will be sold retail at approximately 25p each, but schools will be eligible for discount for larger orders, say the firm.

Further information from Combined Optical Industries Ltd, 200 Bath Road, Slough SL1 4DV.

World food

Food for Thought is a study course compiled by Christian Aid, CAFOD, and Oxfam on the world food crisis and its implications for people in the United Kingdom. The package comprises leaflets for 10 people, six worksheets, 15 transparencies, board game, six background papers for study between sessions and notes for the group leader or teacher.

Among the background papers (eight-page booklets) are *Nutrition*, *Needs and the British Way of Eating*, *The World Food Crisis*, *Supply or Distribution for Agriculture*, *Vital Resources* and *Food and the Environment*. The course was prepared by Dr Brian Whitmore and Claire Whitmore.

Details from Christian Aid International Unit, PO Box 1, London SW1W 9BW.

Counter-inflationary wallets

Nicholas Hunter Educational Films are reducing the price of some of their filmstrip wallets by a quarter. They say they can do this because of the volume of orders for "new methods". Ring-binder wallets for 35mm and 24in by 24in

slides are down from 20p to 15p, as are wallets for larger transparencies, 4in by 5 1/2in and 8 1/2in by 5 1/2in.

Further information from Nicholas Hunter Educational Films, Mutton Yard, 46 Richmond Road, Oxford OX1 2JT.

Not world enough

David and Jill Wright argue that schools are failing to provide a balanced and up-to-date view of the real problems of other countries

How far has the current concern for the "oneness" of the world been reflected in the school curriculum? The media are full of the problems of depleted resources and of the demands of the Third World for fairer terms of trade. Though people may not realize it, everyday conversations revolve around the same topics, even if expressed in terms of grumbles about Arabs and the price of food. Even *The Archers* had Aunt Laura decorating Ambridge Church at Christmas to contrast the rich and poor worlds. In one way or another, the rest of the world is relevant to everyone, all the time.

The school curriculum cannot be based on yesterday's newspapers, but it would seem reasonable to think that a major role of the school is to help pupils construct a view of the world that is balanced and up to date. There have been few attempts to assess the appropriateness of the school curriculum in these terms, and even fewer international studies. So a small-scale Unesco FAO project in-school development in the *Industrialized Countries* may be of interest. In this, the place of development education (education about development and the developing countries) in secondary schooling below sixth-form level was studied in France, Germany, Hungary, Sweden, Switzerland and Belgium. There is not much cause for satisfaction in any of the six countries studied, despite a number of interesting initiatives.

We undertook the British part of the study (published as *The Changing World in the Classroom*). Our findings are impressively similar to those of other studies because of the lack of central control of the curriculum and the brief duration of the project. Nevertheless, the impression of neglect of the world view, and especially neglect of the Third World in the curriculum, was so overwhelming that it would certainly be substantiated by larger studies.

Our report concluded that there is a vicious circle of neglect, whereby each part of the system is virtually prevented from making appropriate major changes by its dependence on other parts. For example, the examination system and the Schools Council's relative neglect of the world view reflects a lack of demand for such material in the curriculum. Teachers' lack of demand is largely due to lack of confidence in handling a world perspective.

This lack of confidence can be traced to their school and college courses, which neglected the wider world. This in turn is caused by the failure of teacher-trainers to focus on this area, which echoes the silence of educational research on the subject. We ought to recognize that we are all far more insular in our outlook and our work than we had realized.

'The Far East appears in history when we need spices, and promptly disappears again'

The world view has generally been left to those subjects which have traditionally dealt with the world—geography, history, social and religious studies. But often, where a world view exists, it is dated and often stereotyped. Frequently, the approach is almost entirely utilitarian, reminding us of the rhymes in our small daughter's *First Book of Animals*, such as "What does he do, this pig so neat? He gives us pork and ham to eat". Mercifully, school books do not rhyme, but the Far East appears in history when we need spices, and promptly disappears again. Ghana is the place that grows cocoa for us; Indians grow tea and Zambians dig copper for us. The rest of their history and geography and culture are often not included, and so, for the pupils, do not exist.

Changes are coming, and a fairer view is emerging in these subjects, but only a few schools attempt a view of the world which deliberately seeks to avoid ethnocentric attitudes. World history courses now have some interesting textbooks available, and the move of religious education towards world religions is becoming a major discussion point, even if it is still only a minority activity.

Religious education has also developed a "world view" in deliberately seeking to teach and discuss world problems, and similar topics often appear in social studies courses. While this is welcome, it often leads to an emphasis on the symptoms of poverty, such as undernourishment, ill-health, and unemployment, rather than the causes of poverty and underdevelopment. This can lead to new stereotypes—the starving Indian, the idle African—and a false view of world inter-

'All too often integrated studies reinforces the parochialism of the curriculum'

relationships; it is the causes that need study as much as the results.

Some people argue that the most interesting developments in the curriculum are in integrated studies. Integrated study of Africa or South Asia should be excellent, but we have found few good examples, even though our report specifically invited people to send them in. Instead, we found numerous cases of uncritical absorption of dated stereotypes. Probably the most popular form of integration is environmental studies. In a few schools this includes relevant issues about world environments, but all too often it reinforces the parochialism of the curriculum.

There are major difficulties in "internationalizing" subjects, especially over time and the avalanche of obscure facts that descend on the pupils. Many teachers would argue that there are already too many facts in most subjects, and that much thought is needed on how a world view can be achieved without overburdening both pupils and teachers. The difficulty is less severe in subjects such as modern languages and maths, which emphasize methods rather than content, since the basic structure of the subjects need not be altered. If the idea of a world view permeating the whole curriculum is valid, it is as important to discuss the potential contribution of these subjects as to consider the already overburdened history/geography/religious education area.

French teachers, for example, study many aspects of life in France, yet we have never found studies of Francophone Africa, or even of the French West Indies—which are officially part of France. Language development would not be impaired by this widening of the curriculum, while pupils' interest might be increased by the greater variety. And their opportunity to study problems and achievements of parts of the Third World would be enhanced greatly. But until the demand exists from teachers, publishers cannot be expected

to produce verbal or visual material on the subject.

Maths teaching emphasizes methods too, and again the use of data from the Third World is virtually unknown. Yet a study of income levels, population growth-rates, variations of commodity prices, degree of dependence on one major export, calculation of Gross National Product, and so on, through the medium of mathematics would add interest and relevance to the subject without impairing mastery of mathematical method. The lack of established channels of communication between experts in subjects such as modern languages and maths, and people who seek to hold a world view, poses big problems. If mathematicians and linguists only talk to other mathematicians and linguists, the outlook is bleak. Similarly, teachers of technology, science and art would benefit from discussion with all concerned with internationalizing the curriculum, as there would seem to be scope for adding variety and interest in those subjects by allowing a world view.

'Most academic education is deep in philosophy, sociology, and psychology, and a world view is not a characteristic of any of these disciplines'

A study of agents for change in the curriculum does not give much cause for optimism. Most academic education is deep in philosophy, sociology and psychology, and a world view is not a characteristic of any of these disciplines. More surprisingly, both radicals and reactionaries in education unite in being more interested in local and national issues than in a world view. Penguin Education Specials are as silent as the Black Papers on the world beyond Dover.

Most Schools Council projects also ignore a world view, and not a single one seeks to emphasize this theme. From over 100 lists

of opportunities we have space for only four examples—all of them projects which, by other criteria, have merited high praise. *Geography for the Young School Leaver* never leaves the rich world. The Spanish and French projects do not mention the Third World till late in the fifth form, when neither teachers nor pupils would wish to tackle major new topics. The moral education project deals with personal issues, but ignores the moral questions posed by unjust social systems. The Scope materials (English for immigrants) reinforces accurate stereotypes, portraying eskimos in igloos, Arabs in tents, and Africans in straw huts.

Despite greater teacher domination, external examinations still have an enormous influence on schools. Any changes in their syllabuses make for changes in the curriculum. They are widening their scope, but even so it is often in the teachers' and pupils' interest to omit any Third World element in the syllabus. Until recently, it was only possible to study rich white countries in the Geography O level examinations of most boards, and this is still reflected in the syllabuses of many schools. When one board introduced a part on Africa as an option, less than 1 per cent of the candidates were entered for it.

It is remarkable how much has been achieved by a few enthusiasts, supported by organizations such as VCOAD, Oxfam, Christian Aid, CEWV, WEF, and many other unprofitable initiatives. Publishers are gradually becoming aware of the need for a world dimension in new books, too, but vast amounts of thought and discussion are needed for an effective approach to teaching about the whole world.

In the meantime, some alarming items are being published. A book entitled *World Problems* has a picture captioned "Coloured by Conductor"—the conclusions pupils may draw merit reflection. Another author who draws away from the land into facades where he could make such products as champagne, tools, and instruments, then the milk might begin to work.

An effective world view demands more knowledge and a more open and questioning attitude on the part of publishers, authors, teachers and pupils. The relative lack of liaison between experts on aspects of the Third World and the one hand, and the education world on the other is worrying, since this is a sensitive area in which enthusiasm alone is not adequate.

What is happening at the national level to stimulate the development of an effective world view? The picture is not encouraging. Numerous exciting initiatives seem to have petered out. Her Majesty's Government signed a radical Unesco resolution about education for international understanding in November 1974, but do not seem to have got round to telling teachers about it. The Department of Education and Science ran courses—and the TES publishes "Extras"—on European studies and American studies, but the Third World has no fairy godmother. There was a meeting with the Minister of Education at the House of Commons in February 1975, to discuss these issues, but the Minister was changed. There was a meeting at the Schools Council, but then the Schools Counciling discussed, *inter alia*, the desirability of internationalizing the teaching of modern languages and mathematics, but no linguists or mathematicians were present. There was a headline "The missing world" in *Educational Research News*, but the copies we have seen were buried beneath empty coffee cups. There was an article about the Unesco/FAO report on the "More lony" page of *The Guardian*—but how many educationists read that page? This led to an interview on the BBC World Service—but it was not broadcast in Britain. There is an article in the TES, but...

The evidence suggests that our education system is not interested in a world view. Nevertheless, we are not totally discouraged. Ultimately the individual teacher is bringing a free and the right to her teaching, world dimension into his or her teaching. World awareness is gradually growing in many areas of the curriculum, and, despite all the obstacles, more and more teachers are counting this as one of their objectives. We would argue that every school should have a subject can and should seek to see discussion world view. We would like to see a conference, even in-service courses and every examination. We are convinced that the possibilities outweigh the problems.

"In-School Development Education in the Industrialized Countries: A Study in Comparative Study" which is London, SW1, VCOAD, 25 Wilton Road, Kensington. David Wright lectures at Keesick Hall College of Education, Norwich; Jill Wright lectures at Avery Hill College of Education, London.



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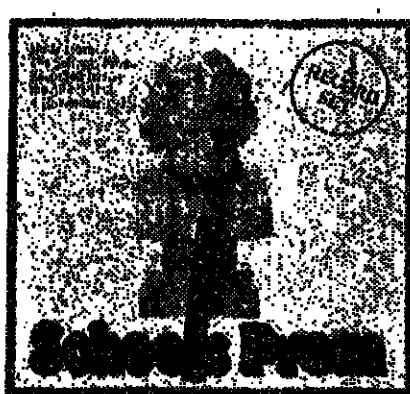
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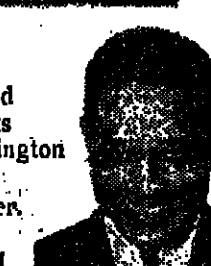
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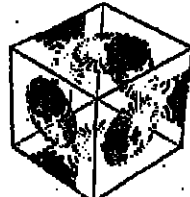


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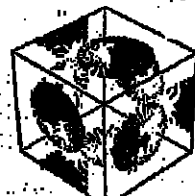
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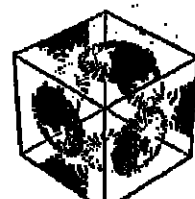
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Figure it out

Geoffrey Rose, education officer for ATV evaluates the new mathematics series for primary schools

Can television help mathematics teaching? And if so, how? Established users of *Figure It Out* (ITV) have been surprised by the change of style of the present series. Previously the programme aimed at teaching seven to nine-year-olds facts about mathematics on specific themes, e.g. capacity, area, or time. But experience at making this type of programme, gathered since the first ITV mathematics series in 1961, caused programme planners to question whether television could do this effectively.

Can a fixed pace, fixed time, group teaching experience take every child in a class, with all their individual strengths and weaknesses, through the same learning sequence from start to finish? Without knowledge of the class, without feedback and with no possibility of establishing a working rapport, can a television presenter teach the children for the teacher? If not, can time and resources be better used in stimulating children to explore mathematics for themselves?

Reports by education officers who watched the series in schools with teachers and their classes, as well as feedback from teachers' letters and report cards, suggested that few of the average seven to eight-year-old class (is there an average seven to eight-year-old class?) actually followed every teaching item step by step. Teachers needed to go over the material again with individuals, groups or the whole class before they could be certain that all their children had learnt from the particular sequence.

In planning the new series of *Figure It Out*, for transmission in 1975/76, it was decided to move away from supplying a mathematics course. A non-didactic format was chosen which offered the teacher numerous jumping off points which could be pursued with groups or the whole class. Such a magazine would offer four or five unrelated items, including animation, mime, filmed activities as well as computational work. These would provide

a variety of new approaches and starting points in a more usable form. The first of the 28 programmes was broadcast last September. It featured two presenters, Fred and Jane, who explored a variety of mathematical activities in the studio. The approach was light-hearted, inquisitive and enjoyable, with the occasional school boy joke to link (sometimes exuberantly) the items. A computer was consulted over the more difficult problems and KEN—Knows Everything about numbers—became a temporary but endearing character.

Ben Benison showed through the medium of mime how the body experiences various shapes in a mixture of everyday and fantasy activities. Film captured events occurring in the outside world which when investigated were shown to have mathematical connotations. Animation was used to illustrate how triangles could become hexagons and how these could tessellate in a honeycomb form. During the series other activities have been introduced which deliberately explored the boundaries of the subject. The mime was replaced at first with songs about shapes and later an origami showed how a piece of paper could be folded to make a duck, dog, bird, etc. "Supermath" (really Fred) took over from KEN the computer and called on his wizard phone to help him solve problems posed by Jane.

Although the new inclusions complied with the over-arching magazine style the old favourites were missed. Children wrote in asking when KEN would be coming back and could Ben be brought back instead of the songs? These have greatly assisted in the evaluation of the series and changes will be made based upon the comments for the next transmission in September this year.

"As you are so clever and intelligent Supermath," wrote one eight-year-old, "could you please bring back KEN? I miss him. His friend wrote to Fred asking to go on the programme. 'I am writing this slowly because I know you can't read very fast' he concluded. These points emphasize the importance of the series to children. It is not about working relationships and personalities. During the first term's transmission

I watched every programme twice in schools with teachers and their pupils. At first teachers were taken aback by the completely changed style. After the programme there was a momentary pause, a double-take in which teachers collected their thoughts. However the children had instantly made up their minds. They loved it. What was encouraging was the obviously high level of motivation it engendered which left the children anxious to explore for themselves the activities they had just watched.

One urban middle school teacher used an item about dice in a variety of ways according to the wide range of ability of her pupils. An advanced group looked for the many ways a hexagonal net could be made to form a cube. Another group examined boxes of various shapes to see how the manufacturers had designed them. Practical activities also included the making of a dice with the mathematical limitations of ensuring that opposite faces added together to give seven. Less able children were strengthening their number bonds by finding the combinations of two figures that totalled seven.

In a village school on the edge of the Cotswolds a teacher used *Figure It Out* as a stimulus for art work. Children were encouraged to design and make boxes for themselves, while others painted tessellating patterns similar to those seen in the animation sequences. The teacher confessed to being no mathematician, but her children were encouraged to make histograms and number sequences at home.

Some teachers could not get used to the change in style and dropped the series. Their letters objected to the humour content and the light-hearted treatment of the subject. Those who continued to view found this new resource stimulating and encouraging. Trained mathematicians confessed the programmes reminded them of what they should be doing in mathematics and helped them to motivate their children. Other teachers who were reluctant about teaching mathematics have been inspired by the antics of Fred to explore the subject in an inquisitive and enjoyable way. Children who before at best would have acquired a neutral attitude towards the subject have been shown that mathematics can be more than figures on a page. It can be fun!

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in which relevant, motivating and genuinely educational ideas are presented through varied illustration, layout and use of colour. We should not be distracted by the trivial or non-educational use to which these alternative methods are being put. Comic strips are perhaps a good example of sophisticated reading matter which appears to be easily comprehended by children.

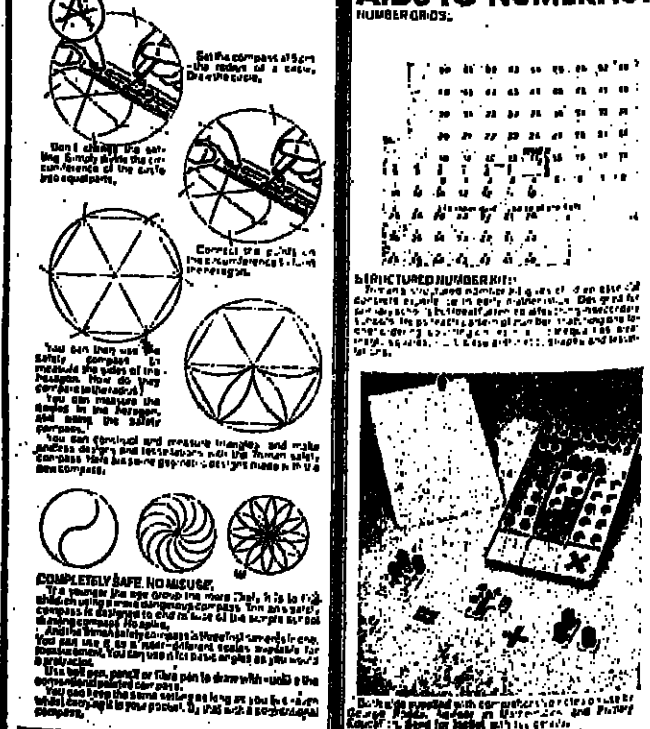
Can we learn from cartoons, from the comic strip format and from the instructional diagram? The draft materials for SMP seven to 13, for example, which are being tried out in pilot schools, contain some highly visual booklets to illustrate relevant mathematical ideas and processes for 10 and 11-year-olds. In addition to style and format, many schools are now experimenting with worksheets, workbooks and textbooks in varying mixtures, and discovering that individual children often benefit from such varied and flexible materials.

The value of all this experimentation should be lost sight of. In my experience pupils up to and beyond university level benefit from a more motivating and varied educational approach, using models, more visual ways of teaching, concrete examples related to everyday life.

The educational welfare of the individual child is at stake. Let us think more about them, their hopes and fears, their life-styles, their careers so that by keeping them in mind our decisions are more likely to be informed and compassionate.

Dr. Alan Rogerson is research director of the School Mathematics Project.

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Modelling and creativity

By Wilfred Flemming

"Nothing is more impressive than the fact that as mathematics with its increasing use of the upper reaches of ever greater extremes of abstract thought, it returned back to earth with a corresponding growth of importance for the analysis of concrete fact." A. N. Whitehead on seventeenth century mathematics.

Much of the learning of mathematics is of the broad and butter variety. Skill in the use of a written symbolic language embodying a characteristic group of abstractions is acquired as an aid to thinking in dealing with questions of order and pattern as they occur in mathematics itself, and in the world around us.

The process of dealing with such questions is creative, in that it systematically produces techniques for dealing with new problems in mathematics or the real world, reducing their solution to the mechanical application of definite rules. At the same time, by the very success of this process, the need for creativity is eliminated and the mathematical challenge of the problem removed.

For example, the well-known problem "Using only a balance, find the one counterfeit coin in a collection of 12 coins in three weighings, saying whether it is heavy or light" has given pleasure and satisfaction to many because of the puzzle-type thinking and ingenuity which its solution calls for. But the problem can be solved by a routine process as follows:

"Label each coin with one of the labels 001, 012, 020, 022, 100, 102, 110, 121, 201, 211, 212, 220. Balance the four coins with 2 in the initial place against those with 0 in the initial place. Write down 0 or 2 according to which of the set of four coins is heavier, or 1 if they balance. Repeat for the other two places arriving at a number, say 210. The coin which is so labelled is the one we are seeking and it is heavy. If no coin bears the label, the coin which is 012 where any 0's remain unchanged, 0's are replaced by 2's and 2's by 0's. This gives the counterfeit coin and it is light." This solution is due to P. J. Dixon, "The Problem of the Pennies", *Mathematical Gazette*, 1946.

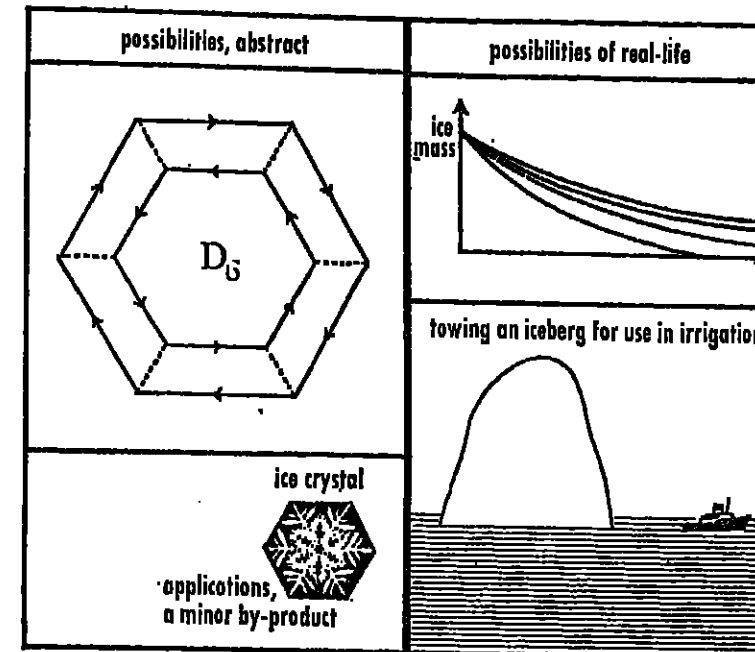
Mathematical progress has been made when a mechanical method of solving such problems has been arrived at which can be learnt and practised as a skill, its use having been understood. The language thereafter does the work, freeing the mind to occupy itself in new creative activity. This is typical of the mathematical method in that the use of a specialized language is developed as an aid in, even an instrument of thought and tool for further creativity.

The concern of mathematical education is surely that the pupil shall progressively learn the language and acquire facility in its use, including symbolic manipulation. This was well appreciated at the beginning of the century as is shown, for instance, by the type of over-elaborate examples used at that time in the teaching of arithmetic. This arithmetic, however, aimed at no more than training, thereby defeating its own purposes.

The advent of pupil-centred approaches, the accent on individual learning by doing and discovery and a changed pupil-teacher relationship springing from respect for the pupil's autonomy, are among the factors which have transformed attitudes to school and learning. Methodology has improved immeasurably, but we seem less sure now than we were previously of the aims and content of our courses.

The use of mathematical games, puzzles and pastimes, and other forms of creative activity is encouraged, because it fosters subordination and motivates the pupil towards learning. Maybe in consequence, a tendency has arisen to use the term "creative" with a psychological rather than an educational connotation. If the pupil is happy, we are inclined to be content, even if his learning does not result in any assessable mathematical end-product.

The educational pendulum has a way of swinging far in bringing about reform. It seems to have swung to ideas which were current 15 or 20 years ago if we may judge from the decline in



Creativity old and new. Mathematics used to offer creative opportunities mainly among abstract possibilities. The new approach seeks out creative opportunities in modelling real life possibilities.

standards of computation. (We must remember also that during these years primary arithmetic has given way to primary mathematics, followed by primary new mathematics) considerably extending the range of concepts to be coped with by the pupil and causing learning to be more thinly spread.)

The considerable educational gains over the period may be in danger of being thrown away as the pendulum swings back. It is likely to go too far, for we tend to follow each other like sheep when subjected to such pressures as result from forceful complaints from industry, Black Papers and the like. To keep track of the minor stages of progression in the learning of one child and to plan their ordered development in practical activity, is no mean task, but the teacher has to do this with a group of children and organize their work. Moreover, the unbiased teacher in particular may not possess the requisite level of understanding of the sequential development of mathematics.

Modern methods make heavier demands on the teachers' knowledge and skill than does the traditional class teaching, which relies on a textbook, with sequential development built into it. The natural tendency is for him to regress to the latter. Indeed, D. J. Winteridge, reviewing *Hatcher Maths*, writes "It is a pity that, with so much material available in the resource books, the effectiveness of this series is still weakened by some teachers' belief that it is sufficient for their children to just work through the children's books" (TES, February 20). Maybe teachers should stand firm while they take stock and do some hard thinking.

A similar situation has arisen at secondary school level. As is well known, the School Mathematics Project has made a considerable contribution to the reeducation of mathematics teachers and is used in at least half the secondary schools in the country. Yet a crisis in mathematical education is thought to be with us and, for some, SMP and CME have come to be regarded as synonyms.

The production, early during the last century, of non-Euclidean geometries—geometries in which the Euclidean parallel axiom is replaced by one which assumes that more than one line through a point, or no lines at all, are parallel to a given line—was the realization that axioms could no longer be regarded as self-evident fundamental truths corresponding to empirical facts.

Mathematics thus seemed to be lifted out of physical reality, away from its application, with unlimited possibilities for development on its own account. The subject came to be seen and studied as a unified structure built on the basic notions of set, relation, function and operation with applications brought in as an apparatus afterwards.

The view of mathematics is exemplified, for instance, by the Unesco mathematics project for the Arab states launched in Cairo in March, 1969. Studies in modern mathematics

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Off by heart

Do we remember to provide our children with the tools which are indispensable to them asks Beryl Spencer

Over the past 30 years a great deal of time, money, energy and devotion has been given to research into the teaching of the basic subjects in infant schools, not least into mathematics, yet we still find that mathematics is disliked by many children and, as reported by *The Times* education correspondent on March 26, "Some students are entering universities without the basic skills and information needed to pursue their courses... without the sheer skills in mathematics to use mathematical equations, and the use of mathematical concepts is not as high as that which is regarded as necessary if they are going to be able to graduate into professional fields three years later".

What has gone wrong? Of course, enthusiasm and interest can be killed at any time by dull insensitive teaching, but if children acquire confidence, enjoyment and a sense of achievement in their studies in the early years they must surely have a better chance of surviving the difficulties and disenchantments which may beset them later. I suggest, therefore, that it is worth while, yet again, to consider how we teach mathematics to the very young.

Mathematics is about the world in which we live. It relates to everything in the universe, from subatomic particles to outer space. What can be dull about that? It relates to all the achievements of mankind—architecture, medicine, music, poetry, space travel—what could be more exciting than that? But do we tell this to our children?

Teachers of young children have

for many years recognized the need for them to enjoy mathematics and have brought into their classrooms a feast of apparatus to foster their interest and to expand their knowledge. It is common now to see small children involved in activities such as shopping, drawing plans, making cakes, making models, patterns and so on, that require considerable skill in weighing, measuring and counting, but do we remember to relate these often convoluted activities to the expansive view of space and number which we ourselves know?

And do we, amid all this activity, remember to provide our children with the tools which are indispensable to them if they are in any way to partake of the magical world of mathematics, as they grow up? Do we ensure that they know their multiplication tables by heart? Do we give them such daily practice in addition and subtraction that these simple processes become automatic?

"I like sums best," said David. "Why?" "Cause they're easy—but I do get them wrong sometimes." David is a very ordinary boy in an ordinary class, yet at eight "sums" is his favourite subject; he has reasonable facility in simple sums involving the "four rules" and can do his times tables to 12. He and his classmates have had all the fun of practical mathematics—the whole gamut of first school activities, but to them, learning tables and doing sums are fun too.

Children love to do what they can do and a newly acquired skill has to be practised again and again and again until it is completely natural and automatic response. Few of us can have escaped the toddler who spends a whole day singing the same two lines of a

rhyme or the six-year-old endlessly skipping and chanting some ancient clucking their heads, the children are playing, blissfully unaware that they are driving their elders to distraction. Children learn by copying, walking, reading or counting and to them, full of delight and intent.

Is it too much to expect children during their infant years when they learn these things so easily, to commit to memory multiplication tables—or to acquire an automatic response to the addition and subtraction of simple numbers? Fully or more years ago, children were often well versed in mechanical arithmetic, but few were lucky enough to have revealed to them the visual, the practical use of mathematics. Now, it seems, most small children have "fun" with mathematics, but lack confidence in using the basic tools of numeracy. When they could be moving into the exciting realms of geometry, algebra, trigonometry and pure mathematics, they are hampered by their lack of competence in simple calculation. Surely it is timely to reconsider the teaching of mathematics in infant and first school years, to ensure that children are not left with a dull subject, least even the bright ones continue to stand at the threshold of usefulness, lacking the basic skills to take them forward into fullness of achievement both for themselves and for society.

Beryl Spencer is headmistress of Brentside First School, Harwell.

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The issue was raised by C. S. Pierce (1839-1914) in his paper "The Essence of Mathematics" where he is quoted as saying: "Mathematics in essence and by definition is the study of what is true of hypothetical states of things and asserts no matters of fact whatever. On this view, mathematics is essentially an activity; a truth-finding discipline which explores and investigates possibilities in real-life situations and concrete fact."

A proper function of mathematics is thus to consider non-actual or would-be actual situations such as devices for harnessing the power of the tides or the sun using models of appropriate closeness of fit.

The Piercean view has been elaborated, interpreted and its implications for the study of school mathematics worked out, by C. P. Omer, in various papers. For example, in Volume Three of the *International Journal of Mathematical Education in Science and Technology*, 1972, pp 125 to 131 and 329 to 341. He has given it practical effect in the one-year post O Level Applicable Mathematics course examined by the London Board, which he and his colleagues have produced as the outcome of the Schools Council/Reading University Sixth Form Mathematics Project.

The approach adopted in the course seems largely to remove the dichotomy between pure and applied mathematics. The textbook exercises which have been devised in the exploration of interesting hypothetical situations call for imagination on the part of both teacher and pupil. The degree of relevance achieved is such that pupils truly find meaning in mathematics, sometimes for the first time, as evaluation exercises indicate.

The accent is naturally on modelling, and a feature of the course is the mode of examining which has been adopted. In addition to written papers (usually in type and consistent with the aims of the project), each candidate is required to carry out a modelling exercise on a real-life situation of his/her own choice, and to write it up as a 200 statement essay. Titles submitted have included: "A mathematical account of how a tree may lose its leaves in autumn", "Fuel wastage at failed traffic lights", and "Blank sheets when duplicating".

Unlike the usual textbook example, the data are not provided for

these essays, and some form of investigation or search for information is required. The choice of topic calls for imagination and the whole exercise for creativity and the knowledge with which to create. The latter constitutes the broad-and-butt learning with which the course is mainly concerned.

Such work serves as a reminder of the dictum of Benjamin Brannford at the beginning of the century that the aim of mathematical education is to seek the harmonious combination of doer and thinker. Or, in the celebrated words of T. P. Nunn, "A person to be really 'educated' should have been taught the importance of mathematics as an instrument of material conquest and of social organization, and should be able to appreciate its value and significance as a system of mathematical ideas."

Maybe in this particular context the Reading project comes as a welcome contribution to mathematical education. It will be particularly welcomed by those who need to see the subject in other areas, and in the subject in itself, infiltrate all levels of school mathematics.

Willfred Flemming is mathematics tutor in the school of education, Leicester University.

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'But where is the mathematics?'

Give the children a real choice as to what they leave and what they pursue, writes David Sturges

Nasrudin went one day to a well to demonstrate the nature of knowledge to a disciple who wanted to know "the truth". He took with him the disciple and a pitcher. The mulla drew a bucket of water and poured it into his pitcher. Then he drew another and poured it in. As he was pouring the third, the disciple could not contain himself any longer and called out "Mulla the water is running out. There is no bottom to that pitcher".

Nasrudin looked at him indignantly. "I am trying to fill the pitcher. In order to see when it is full, my eyes are fixed on the neck, not the bottom. When I see the water rise to the neck, the pitcher will be full. To do with it? When I am interested in the bottom of the pitcher, then only will I look at it." (Adapted from "The Exploits of the Incomparable Mulla Nasrudin" by Idries Shah.)

Andrew is a 12-year-old in a mixed ability class in a comprehensive. He was doing revision examples in it—does not matter what the texts were, substitute the one you know best. He had become sick over some diagrams of regions of the plane, each with its boundary parallel to an axis, which he had to describe by inequalities.

My explanation of why x > 3 described the region to the right of the line x=3 obviously did not impress Andrew. He pointed at one of the diagrams. "What's that?" "x > 3." He pointed to another. "What's that?" "x < 1." He then looked for a different sort. "What's that?" "y > 2", and finally, "what's that?" "y < -1." "OK," said Andrew and promptly did, correctly, the rest of the exercises.

He had worked out an efficient

strategy for solving the problem in the book. He was happy, he was fulfilling teacher's expectations; the teacher was happy, the children were getting the right answers and working sufficiently hard to make class control a reasonable task. But where is the mathematics?

In the heady days of the early 1960s when Nuffield's Midland Mathematics Experiment and SMP were all coming to the boil, there was a great deal of discussion about how to affect methods of teaching not just the content. But the actual result of the use of all these materials has been to change content and little else. Rewritten versions of MME and the Scottish Group texts have even changed some investigations into step by step questions with only one possible outcome, and these changes have apparently been requested by teachers. Certainly the new material will be to the liking of

And it is when we ask questions about the nature of the activity that the children are engaged in, and about the degree of involvement in the mathematical process, that serious doubts arise about the validity of such mathematical learning. There is a not inconsiderable body of literature in which the authors describe in different ways what they feel to be the missing factor in mathematical education variously called "process", "mathematical activity", "mathematization". Many of these writers give illustrations of their ideas in which children are set an initial problem or activity and then the teacher joins in the exploration following the direction set by the child.

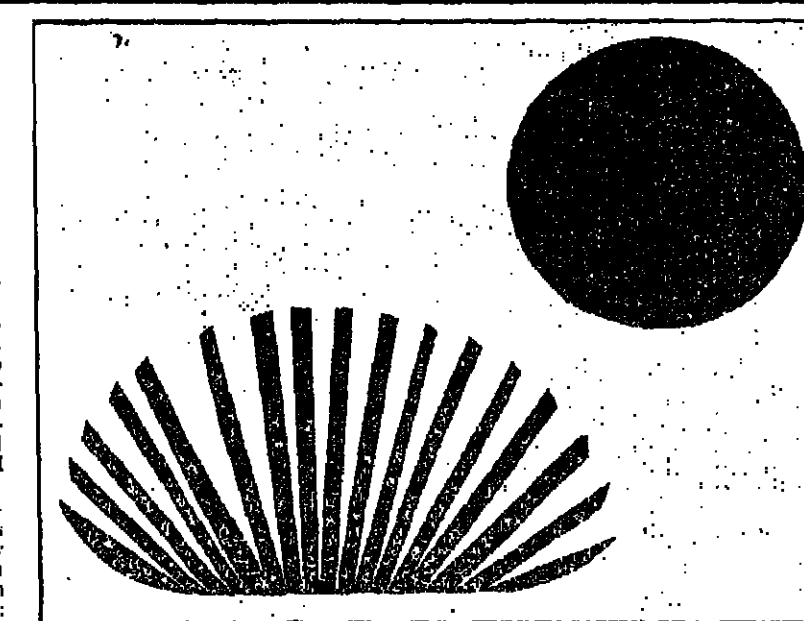
I want to propose as a working hypothesis that the reason we are educating so many mathematical Andrews is that insufficient attention has been paid to the mathematics that children have avail-

able to them. In order to develop awareness in teachers so that they can make use of this powerful facility in children, we need to present mathematics in a way that gives the children access to their own mathematics and motivates them to start on the exploration. One possible way of doing this is to use a variety of situations which are non-linear and give the children a real choice as to what they leave and what they pursue.

As a part of the recently published Network mathematics series there are books containing only photographs and diagrams with few, if any, words. Many people on glancing at these books have said: "But where is the mathematics?" When a teacher asks this question it is possible that he is asking one or all of the following: "Where is the mathematics that I have learnt?" (the mathematics which was included in a school, degree, or college of education course). "Where is the mathematics that I recognize as necessary?" (the mathematics that appears in examination syllabuses and textbooks and is required by further education and employment) but very seldom "Where is the mathematics which the child has available?"

The illustration shows the response of a 13-year-old girl to a page of a book in the Network series called "Links". She was looking at a page showing a triangle cut into strips parallel to the base together with some rearrangements of these strips and said: "But Miss it's not possible" to which the reply was: "Why don't you try?" She put the original shapes on the result to convince friends that the two shapes contained the same amount of material. "Where is the mathematics?"

I value the activity because of the excitement and interest of the girl; I can only guess at what mathematics this activity made available to her since she



is still at the level of awareness which is the activity itself. Later reflection on this and other activities can lead to abstraction and generalization. My own knowledge and awareness enables me to say that this kind of activity involves an important experience of the conservation of area.

The pattern made with the circle caused discussion about whether or not the bits of a circle could make a straight line; an experience of the ideas of approximation and limit. But this is my interpretation. What I have to use is what the children did because this is an expression of their mathematics and is what is available to them.

It is important to recognize that saying that there is a mathematics available to children is not the same as saying that all mathematics is available. In working consistently with the mathematics that is available to children through their actions we shall become aware of those things that can not be invented and have to be offered.

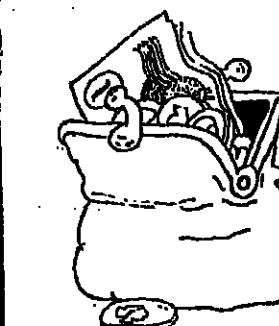
Many people, including some of those working on the various projects, have been aware that there is a missing link in the mathematical

education of children but have not managed to communicate this to more than a few teachers. It is an act of faith, perhaps, to give children the chance to develop the mathematics that is available to them whatever this may be, rather than to feeding them a neatly wrapped parcel of knowledge. It certainly requires teacher skills that are not easy and which need to be developed. In the end it depends entirely on the teachers and whether or not they are content to keep their eyes on the neck of the pitcher and have classes full of Andrews.

The ideas in this article have crystallized over many lengthy discussions with members of the Leapfrogs Group and I am much indebted to them. If anyone wishes to follow up these ideas, and writes to me, I will send a short list of references.

Network Mathematics Series is published by Hutchinson for Leapfrogs. Details of Leapfrogs Group can be obtained from Leapfrogs, 6 King Edgar Close, Ely, Cambs.

David Sturges is a lecturer in the School of Education, University of Nottingham.



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The block and the bucket

Eryl Rothwell Hughes on monitoring and encouraging children's conceptual development

A Schools Council project on the development of scientific and mathematical concepts in children has been set up at the University College of North Wales and directed by Dr Joseph Rogers between 1968 and 1971.

The team has recently published some material and a teacher's guide which marries the findings of Piagetian research with practical programmes for sequential teaching. It also monitors some of the more fundamental concepts normally introduced during this age range.

This article presents some of my beliefs on teaching scientific and mathematical concepts in the primary school that have emerged from a detailed analysis of the research findings.

Recently Piaget's influence on both primary and secondary school teaching methods has been considerable. For the teacher his name is usually

associated with learning by discovery and teaching methods advocating this approach in the classroom usually claim that their particular approach is based on Piaget's work.

Piaget's research has not been concerned with teaching methods but with "knowledge of the laws of mental development". It is not possible at the moment to be certain which teaching approach best enables a pupil to develop a particular concept, even though one of the main purposes in teaching mathematics and science is to foster conceptualization. Arguments concerning the degree of formality in how the work is carried out stem directly from this main objective.

As Piaget's theory implies a stage by stage development of mental ability, related to both experience and maturity of the child, we wondered if simple practical situations could be designed based on research, that would indicate the

misconceptions and conceptions held by children of some of the fundamental concepts met with in the primary school. It can be argued that it is only after observations of this type that teaching can be effectively planned and designed.

It is clear that for research findings to be of any worth for the practising teacher, the method by which such data is gathered must be examined. When one examines the techniques normally used by Piagetian research workers, it is often difficult to decide whether the information gathered supplies real evidence of stages of mental development experienced by all children.

For example, in order to allow the children to express their views freely in typical tests, the questioning procedures used are often such that children can interpret the question in a variety of ways. The researcher then has difficulty in deciding whether they have really understood the purpose of the ques-

tion. Both the sample size and the materials for the children to handle in the tests are usually limited and questioning procedures may be insufficiently analysed beforehand.

Further, the same children are rarely examined on different concepts, and conclusions based on the order of acquisition or understanding of different concepts are, as a result, somewhat unreliable. Longitudinal surveys, too, are rarely carried out as to examine the same children over a period of time calls for manpower and resources beyond the budget of most research.

We have tried to overcome some of these difficulties. The books and materials prepared for teachers and research workers incorporate our interpretations of the responses of over 1,000 children from seven to 11 to a large number of practical test items, dealing with the fundamental concepts of weight, area and volume. From this survey it seems clear that a number of general principles should be borne in mind when work involving scientific and mathematical concepts are undertaken in the classroom.

It is clear that chronological age, in the seven to 11-year-old range at least, is an extremely poor guide on which to base children's level of ability to understand a concept. We found a considerable proportion of younger children (eight-year-olds) capable of stating views not expressed by most children until they were two or three years older. Conversely, a considerable number of older children (10 and 11) were incapable of solving problems which were answered correctly by most children two years younger.

For the teacher this strongly suggests individual or small group teaching methods, close observation

of progress and, above all, a progressive record of each pupil's ability. Teachers of classes of different age groups could often be testing the same three or four stages of work. It would be the proportion of children working at each stage that would vary.

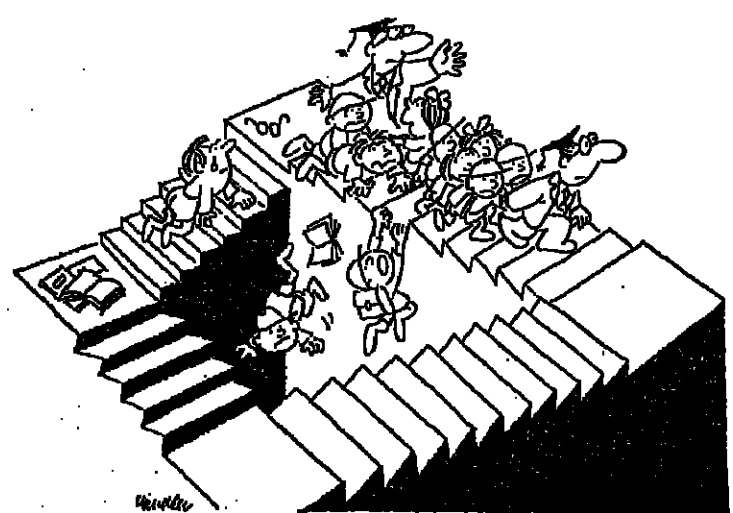
Like other research workers, we endorse the general pattern of Piaget's stages of development, although we emphasize that individual children do not proceed from stage to stage in gradual well-regulated steps. The "Eureka!" moment of an idea is far more common than the gradual dawning of an idea. If our interpretation is correct, it strongly indicates a sequential pattern of teaching. We are not advocating a return to the rigid formal exercises of past teaching methods, but we maintain that teachers require more guidelines on designing sequential learning.

The children, following such sequences, need to handle a wide variety of practical material, all of which should contribute to the same type of thinking process. It may be that only one of these situations triggers the conceptualization, in other words to meet the needs of individual children we argue for structured teaching, based on a wide variety of similar practical experiences. This is far removed, of course, from the rigid, non-varying examples and patterns of older teaching methods, or science courses which took little account of either pupils' motivation or interest.

Designing such material is not easy and guidelines for teachers on procedures to be adopted and pitfalls to be avoided are not easy

continued on page 53

Mathematics and school organisation



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"Look this block just fits into the box like this."



"If I put the block into the bucket so that it was completely under the water, can you mark where the top of the water would come to in the box?" (Although the block is placed alongside the box the pupil fails to equate the volume of displaced water with the volume of the block.)



"Look, I've turned the block round. If I lowered the block so that it was completely under the water, can you mark where the top of the water would come to in the box?" (Pupil fails to recognize that the volume of water displaced remains the same. He focuses his attention on the "increased" dimension—the height of the block.)

Keep up with the times

Mike Harrison on a new BBC series

Keep Up With The Times is a new series of eight five-minute animated films, to be broadcast this summer in Merry-Go-Round.

A long-running series in the BBC's School television output, Merry-Go-Round aims to broaden the interests and experience of first and second-year primary school pupils in the seven to nine-year-old group. It has been providing a miscellany of programmes, from drama to documentary, for some 13 years.

In 1974 the Schools Broadcasting Council asked that the series should give some attention to the growing need for mathematics teaching material for these pupils. The result was a new unit of programmes which attempt to express visually some of the concepts behind the multiplication tables. These five-minute cartoon animations which will be broadcast as the first part of each of the eight transmissions in the summer term this year, start next Monday at 10 am on BBC1.

In many respects Keep Up With The Times represents a new departure in BBC School Television. Most

school broadcasts consist of information or stimulus material intended to form the starting point for a place at the pupils' own work. Keep Up With The Times is intended, week by week, to be a continuation of a place of study. Thus, for example, before viewing the first of the programmes, which hinges on the five-times table, it is to be hoped that pupils will have acquired enough familiarity with counting on in fives, and the multiples of five to be able to anticipate the outcome of the situations presented. Dialogue has been kept to a minimum to encourage a vicarious response.

Another departure from common practice has led to the fragmentation of individual programmes into a series of short episodes. In one sequence, which lasts approximately 50 seconds, one of the series characters fires a three-barrelled pop-gun in turn at each of four targets. The result is a pile of 12 spent corks. This points are made about the concept of cross product and about the three-times table.

A number of themes recur throughout the unit with a progres-

sion in difficulty as the term goes on. The themes include patterns of the number of the week, counting on, various visualizations of cross product and a multiplying machine which illustrates the operation for the audience to anticipate the answers. Other themes, such as odds and evens, powers of two and three, square numbers, multiplication by zero and one are introduced in individual programmes. The unit moves eventually towards the idea of the use of a "multiplication square" as a calculator and as an aide-memoire.

Keep Up With The Times is supported by a cut-out seven-page section in the Merry-Go-Round teachers notes. This provides suggestions for a course of work designed to prepare the audience for each of the broadcasts. The notes were written by Alistair McIntosh, who is Leicestershire mathematics adviser. He also advised on the content of the programmes and was Ian Harris, who is sub-dean of King's College faculty of education. The film animation was prepared for the BBC by Bob Godfrey's Film Emporium.

Literacy and numeracy

By Michael Kingdon and Lionel Westcott

Among the claims made to support teaching statistics in schools, two are of particular general importance: that some appreciation of basic statistical techniques will help the citizen to play his part in the everyday life of our democracy; and that quantification is an important tool of communication and public controversy.

Narrowly, statistics incorporate a body of methods, formulae and traditions which, applied to systematically-assembled data, extracts relevant information. This is its mathematical and computational aspect. But more specifically statistics involve not only the collection and classification of data, but also the interpretation/overprovided school timetable? In the current definition of the problem requires that we deal with it as part of the core-curriculum.

The statistical techniques taught within existing mathematics schemes are only basic, but go far enough to allow the recognition of many mathematically fallacious arguments. Nevertheless the average citizen is not usually in a position to challenge the computational aspects of statistical information supplied to him. He can, however, learn to understand the presentation, interpretation and use of statistics with a healthy scepticism, and this does not necessarily involve any mathematics at all.

To decide if a particular conclusion follows from a particular set of data can be as much a logical and linguistic problem as a mathematical one. Mathematical symbols tend to remain opaque to many people until they are translated into words. It may be reasoned, therefore, that statistical thinking at this level is as much a problem of words as it is of numbers or literacy as it is of numeracy.

Concern at the effective use of language is, of course, the prerogative of all teachers generally, but of language teachers in particular. Within the core-curriculum of the fourth and fifth years—where, surely, we must expect our main inquiry to take place—the English syllabus is already concerning itself

in which statistics have become an essential tool of a communications industry not always disinterested in the process it is managing.

It is important that some attempt is made to develop in each citizen a critical attitude towards the statistical and pseudo-statistical portage he meets nearly every time he opens his newspaper or turns on his television set. This attempt must clearly be made before he reaches compulsory school-leaving age.

The difficulty is one of interpretation and understanding: of seeing both the wood and the trees and the right way through them. Where, as well as what, do we do about it? Do we add another water-tight compartment to our already overprovided school timetable?

Our definition of the problem requires that we deal with it as part of the core-curriculum. The statistical techniques taught within existing mathematics schemes are only basic, but go far enough to allow the recognition of many mathematically fallacious arguments. Nevertheless the average citizen is not usually in a position to challenge the computational aspects of statistical information supplied to him. He can, however, learn to understand the presentation, interpretation and use of statistics with a healthy scepticism, and this does not necessarily involve any mathematics at all.

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Concern at the effective use of language is, of course, the prerogative of all teachers generally, but of language teachers in particular. Within the core-curriculum of the fourth and fifth years—where, surely, we must expect our main inquiry to take place—the English syllabus is already concerning itself

with comprehension and communication. In fact, a healthy scepticism for the tendentious use and abuse of language is—thanks to many CSE syllabuses—built into a great number of schools' language courses. Many schools have planned Mode 3 critical inquiries into the mass media and techniques of persuasion. Explicitly or implicitly some of these are already dealing with aspects of the problem we have outlined; others need only slight modification to ensure that they do so.

Where such provision has not yet been made, ought we not now, as a matter of some urgency, to make it? The problems need defining, perhaps within the context of existing syllabuses, perhaps by extension of them; all English teachers are equipped with the exact formulation and expression of ideas and the objective conclusions to be drawn from them, whatever the context in which those ideas are first met.

The vision remains those wider aspects of the problem that our core curriculum needs to explore—its social implications. Our democracy stands or falls on the interchange of ideas, realistically conceived and honestly communicated. So the next meeting place of literacy and numeracy we suggest is the full interchange of ideas in the social studies lesson. The point surely does not need labouring once it has been made: that the future of our society depends upon the clear-sighted vision of the young people growing up in it.

The attempt, therefore, should be made to develop in all future citizens an appreciation and understanding of statistical ideas, either through an inter-disciplinary approach, or by cooperation of teachers and coordination of syllabuses. And the main part of this attempt should be made in the core curriculum of the fourth and fifth years.

Michael Kingdon is coordinator of the science department and Lionel Westcott is head of English at Collenswood School, Stevenage.

enced in our own questioning procedures.

We strongly agree with teachers who believe that children can only learn by doing but alongside the activity is the essential development of communication.

"Learning by discovery" in the classroom should not be based on free exploration. Such an approach calls for more guidance, observation, structured planning and anticipation on the part of the teacher than was the case in the more formal teaching methods of the recent past. This is progress in the art of teaching.

E. Rothwell Hughes is a lecturer in the Department of Education, University College of North Wales.

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Investigating understanding

By Margaret Brown

It would take a brave soul to define what is meant by numeracy: everyone agrees that children do not have enough of it but there is less agreement about what it is that they do not have enough of. The *Oxford English Dictionary* (1964) does not even list the term; the 1959 Crowther report thought it had to do with the understanding of scientific principles in the spirit of the two cultures debate.

The Schools Council, by coining the dual abomination of graphicacy, imply that numeracy is solely concerned with arithmetic; primary teacher trainers equate it with a pass in O level mathematics; employers commonly think it means the ability to add fractions, and parents, even in the calculator age, still settle for "knowing their tables".

One would hope that any reasonable definition of numeracy as attainment of mathematical concepts and skills in common social usage would include some understanding of the concepts involved in number operations, place value and decimals, graphs, ratio, simple algebraic formulae, geometrical ideas and measurement.

The extent of children's basic understanding of all these areas, and more, is at present being investigated by the project team of Concepts in Secondary Mathematics and Science (CSMS) at Chelsea College, London University.

In the study on number operations—the only one completed so far—more than 1,500 children in the age range 10-13 were given a number of straightforward "problem situations" the solution of which required a single operation on two whole numbers. Some were asked in interviews how they would solve them, while most of the group were asked in a class test to choose the correct solution from a set of mathematical expressions like 9×3 , $9 \div 3$ etc. They were also given the reverse situation of making up a story which matched one of these expressions.

A report on the investigation may throw some light on some of the concepts involved in "numeracy".

Strategy—Most of the children interviewed produced an adequate, though not necessarily efficient, strategy for solving most problems. Adding on ("the shopkeeper's method") was popular in the subtraction problems, and as expected, repeated addition and subtraction were frequently used in place of multiplication and division.

Occasionally this was because the child did not recognize the nature of the operation involved; about 5 per cent of first year secondary children did not generally recognize subtraction problems, 20 per cent generally failed to recognize division, and 30 per cent multiplication.

More often, especially with subtraction, children admitted they had been taught an official method in which "you put one number under the other but I can't remember what you do next".

This would seem to be a strong argument in favour of replacing traditional algorithms by new ones

more closely related to children's natural strategies, a practice sometimes followed in primary but rarely in secondary schools. Could one perhaps justify describing children as numerate if they can solve practical problems successfully by any method? Or do they really need to know when to use the $\times$ and $\div$ operations, if only to get the best out of a pocket calculator?

The average test, of course, whether set by teachers or employers, requires only completion of the standard algorithm, e.g. 24×68 . Although we found a quite high correlation (between 6 and 7) between this ability and the understanding required on our tests, there was enough disagreement, especially in the area of division, to cast doubt on the use of traditional items as a measure of numeracy.

Order—More than 80 per cent of first year secondary children do not distinguish between $12 \div 3$ and $3 \div 12$, or $12 \div 3$ and $3 \div 12$, stating that the answer is the same whatever the order. This may only appear to be a question of mathematical language, which does not impede the solution of the problems. However, children with this misconception are likely to get some strange answers if let loose on calculators, and it bodes disaster for the introduction of fractions and negative numbers.

Stories—Writing a story to illustrate an expression was found much more difficult than recognizing an instance; nearly 80 per cent of first year secondary children were successful in making up a story to illustrate subtraction but about 50 per cent were successful for division and only 35 per cent for multiplication. The subtraction stories given were almost all of the "taking away" sort, very rarely involving the question "how many more..." (Figure 1).

Sharing figured large (and sometimes mistakenly—Figure 2) in the division stories; only occasionally did children use the idea of "grouping" (Figure 3) although in the problem items it had proved to be no more difficult to recognize than "sharing".

One of the reasons multiplication stories were so troublesome appeared to be the difficulty of attaching a concrete meaning to the words "times" (Fig. 4) or "multiplied" compared with "share" or "divide". The best stories often

did not use the word (Fig. 5) but many others came unstuck trying to "multiply" two concrete sweets (Fig. 6).

Perhaps the moral is that we need to vary widely the applications of the operations which we give. Dependence on one model (e.g. "sharing") may give success at this stage but leads to problems later when children are totally perplexed by the meaning of $4.3 \div 2.8$. The very difficulty of visualising concrete examples of multiplication may paradoxically work in its favour later when fewer oversimplified notions have to be overthrown.

Range—Although we found about eight per cent of pupils at 11-12 who were completely successful in recognising the operations involved in the problems (including getting the numbers in the right order), a further 35 per cent were generally competent, and another 25 per cent had at least some idea of multiplication and division. These proportions correspond roughly to those in the large-scale survey by the science team in the CSMS project, who found at this age about 12 per cent of pupils to be at the early formal stage and 52 per cent at the late concrete stage as defined by class versions of Piagetian tasks.

There was a steady improvement over the years from 10 to 13, but even so the range in levels of understanding included both extremes in all year groups. For example, more than 15 per cent of 13-year-olds had a lesser grasp of number operations than the average 10-year-old, and conversely more than 15 per cent of 10-year-olds showed the more understanding than the average 13-year-old.

In general our results suggest that secondary school teachers should by no means assume that all children have a firm understanding of the nature of the four operations on natural numbers when they arrive.

By the end of the project in 1979 we hope, given the continued generous cooperation of a number of teachers and schools, to have helped to illuminate a few of the problems connected with the general attainment of numeracy.

(Further information is available from CSMS, Chelsea College, 8800 Lillie Road, London SW6; the tests and teachers' handbooks are likely to be published by the NFER.)

Margaret Brown is on the staff of the Centre for Science Education, Chelsea College.

Fig. 1

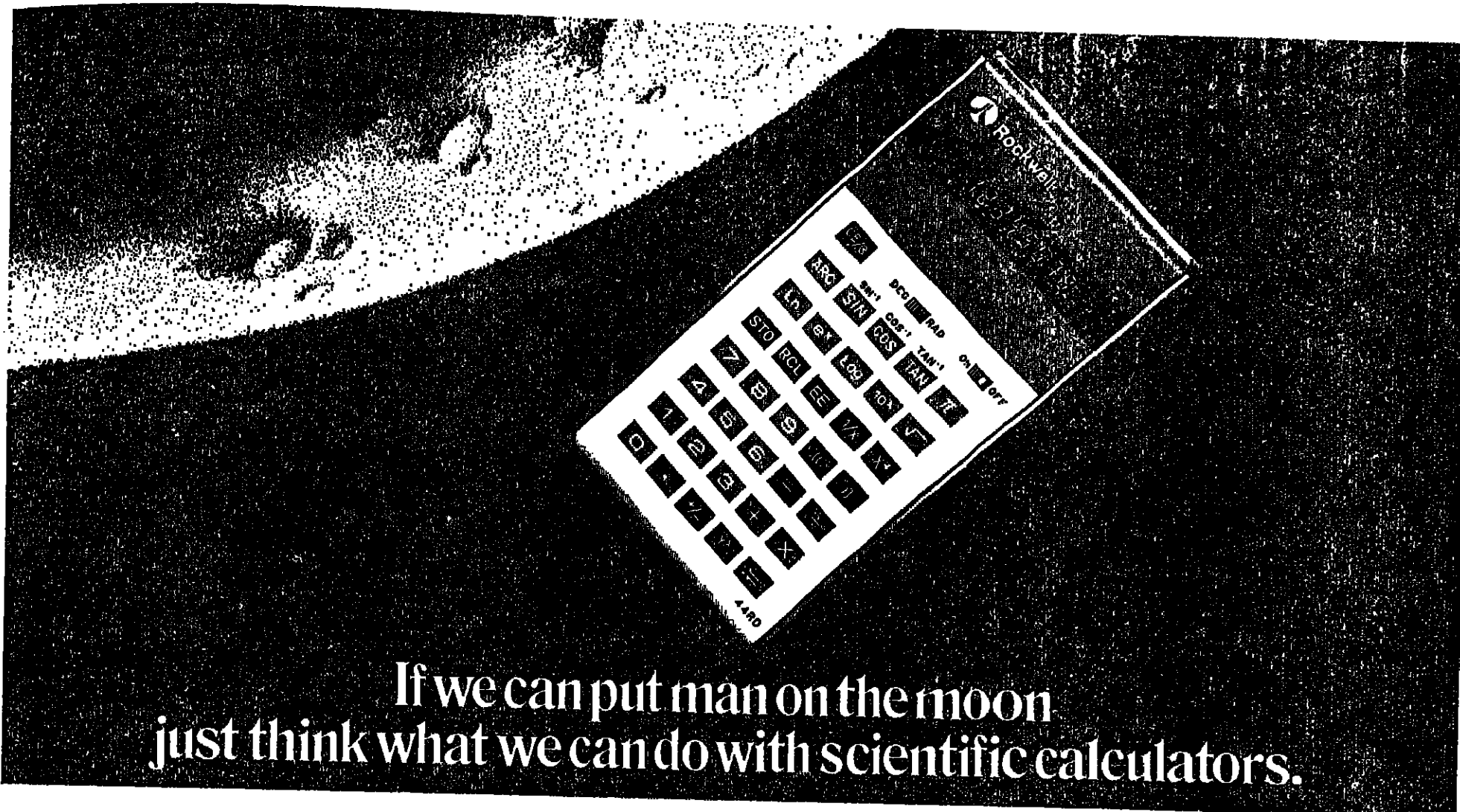
Fig. 2

Fig. 3

Fig. 4

Fig. 5

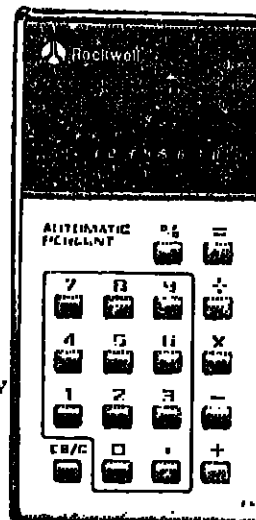
Fig. 6



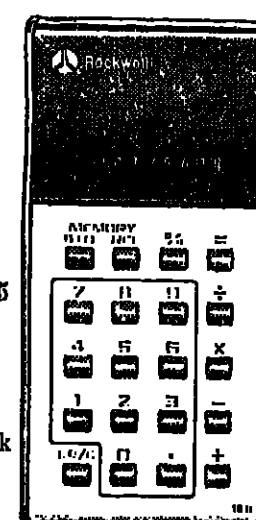
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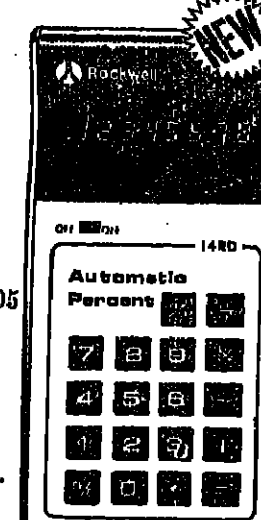
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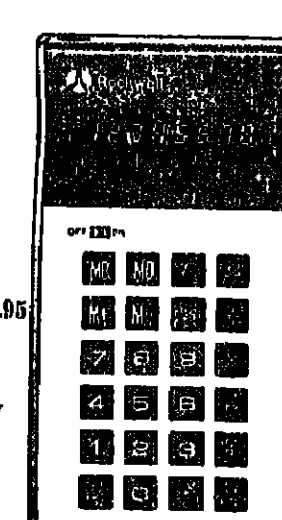
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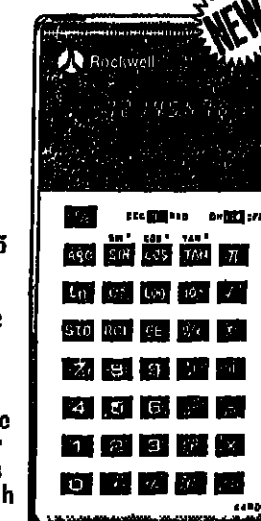
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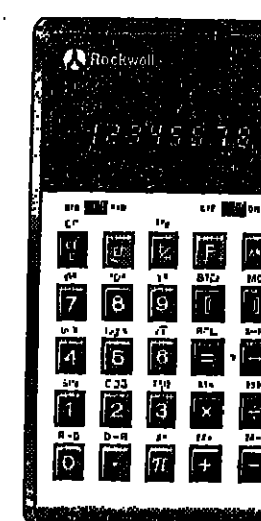
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GRIDSHEETS

At the touch of a key

Peter Wotton on choosing a calculator below £30

At present the market is flooded with every shape, size and price of calculator and the terminology, never especially clear, varies from manufacturer to manufacturer.

In this short article I intend to introduce the basic differences, the meanings of what to choose and finally what features are to be expected at the different price levels.

Three basic types of calculator are currently available—

Machine Logic—This type has two keys with an equals sign. One key also has a plus sign, the other includes the minus sign. This method stems from the days of mechanical office machines, and although some electronic calculators do exist using this logic, it is obsolete, if not obsolete. It has the disadvantage that entries and calculations are not keyed in as they are written.

Algebraic Logic—Identified by the single, unshared, equals sign. Practically, one is able to perform calculations as they are written; this means that $2 \times 3 + 4 \times 2$ is performed as $(2 \times 3) + (4 \times 2)$. To confuse the issue there are two sub-types, the one examined here is the one fundamental to the price range considered.

Basic to all algebraic logic calculators are two registers (a store for information that is awaiting manipulation) colloquially known as the x and y registers. As a number is entered on the keys it becomes visible on the display (the x register). On the entry of a function (+, -, ×, ÷, =) the information is transferred to the y register.

In some calculators the x register retains the first entry unchanged (automatic constant) and is "live" to any entry at all; in others the first entry is moved within the x register and the calculator is "dead" (non-automatic constant) until the next numerical entry is made on the keys. The results of a simple calculation in the two systems are shown in Example 1 in box above.

Reverse Polish Logic/Notation (RPL or RPN)—This type may be identified by the absence of an equals key. The method is particularly attractive for scientific calculators where the complexity required may be realized with simple logic circuits. The x and y registers exist as before, together with at least a

third register, but operate in a slightly different manner and the equals key which is usually marked "Enter" or "R" (not to be confused with the upper case key on a double function keyboard). Further registers are added according to price and the manufacturer's preference; three or four is considered optimum.

Example 2 (zeros suppressed; three registers)

(32+2)=11
Key 2 E 3 E + +
= 33
= 33
= 33

It can be seen that each Enter operation puts the contents of the display (the x register) into the y register, the contents of the y register into the z register and so on according to the number of registers available. Each function (+, -, ×, ÷, =) keyed in causes the x and y registers to react, puts the answer in the x register and moves the data up one place in the register stack.

Overflow, Underflow and methods for excess digits—Most recent calculators employ floating point logic (the decimal point moves its position in the display to save the full eight digits for an eight digit machine) and only this type is considered. Any answer beyond eight digits is rounded off at the least significant digit.

Overflow and Underflow (decimal point beyond the display, either to right or left respectively) are sometimes indicated with a special display symbol. When this happens, the user stops the calculation, introduces an exponent (allowed for at the end of the calculator) and continues. Sometimes digits are lost, particularly on underflow; it depends a great deal on the make of calculator.

Another method is, in effect, to increase the size of the x register so that the decimal point can float, together with the eight digits, beyond the range of the display. The calculation can then be allowed to pass outside the display range (the appropriate and being indicated) and at the end of the calculation the result multiplied or divided by powers of 10 until the decimal point reappears in the display. A maximum of eight digits will be available. A comparison example shows the important difference. See Example 3 in box above.

Scientific Notation—All numbers are reduced to a value between 0 and 9 (the mantissa) together with a multiplier which is some power

of 10 (the exponent). It is particularly, though not exclusively, used with RPL.

Commonly, calculators using scientific notation operate with floating decimal point until overflow occurs, when there is an automatic conversion to a five digit mantissa, two digit exponent, and exponent sign. The missing three digits are recoverable in some cases and the calculation is performed with the full eight digits.

A slide rule is an analogue device (continuously variable) whereas a calculator is a digital device (discrete steps). It does not necessarily follow that a five digit calculator is more accurate than a slide rule scaled with four digits—it depends on the operator and the number of steps.

In effect, a calculator builds up a small unidirectional logical error, whereas a slide rule is made to self-cancel (an identical situation applies in the case of a computer). Some calculators and computer programs have difficulty interpreting, say, the tangent of angles close to 90°. See Example 4 in box above.

Memory—This is offered in four different forms, in the first two the calculator will only perform an operation that includes a pre-set constant and only one function is possible between the keyed entry and reaction with the constant. In the third form a limited number of functions may be used but the calculation is still restricted. The full memory is different in that it allows information to be stored indefinitely, though even here this may be limited to the simple memory types, with the calculator free to perform quite unrelated steps meanwhile.

Non-automatic constant—Typically designated K. Once the data in the y store is passed to K, all subsequent operations are affected until the calculator is cleared. The constant should be available on all four operators.

Example 5. $6+2 \div 2; 7-2; 3 \times 2; 6 \div 2 \div 2$
Key 2 + 6 + 7 - 3 × 6 ÷ +
= 8
= 5
= 10
= 2
= 1
Note: the K store in this case is entered from the y store with a plus sign. Alternatively, any of the other functions could have been used including equals. Note also that the y store is now dead.

Automatic constant—In some ways this is less flexible than the non-automatic version but is particu-

larly used on calculators having the facilities root and reciprocal included. It does, however, offer considerable savings of keying effort with multiple entry.

Example 6. $2^5 = 8$
Key 2 × =
= 8
= 32
= 256
= 2048
= 16384

Brackets—Some of the scientific calculators allow the use of brackets which are used in the manner of the written equation, though the number of steps between brackets may be limited.

Memory—This may be in the simple form with one or two keys used for both entry and recall, or with the full five keys (M+, M-, MR, MC or CM, M←→+).

Example 7. $3(2 \times 3) - 18(2 \times 3) + (6 \times 2)$
This is first most easily seen by words: obtain (2×3) and put into memory (M+); multiply the (2×3) still in the x store (display) by 3 and exchange the answer with the memory (M←→x); multiply the new value in the display, (2×3) , by 18 and subtract from memory (M-); form (6×2) and add with contents of memory (MR).

Key 2 × 3 =, M+, × 3 =, (M←→x), × 18 =, M-, × 6 =, 2 × =, MR, =.
Note: it is important to check the use of the memory. It may be completely independent as shown, or it may have restrictions which limit its scope.

Automatic constant—In some ways this is less flexible than the non-automatic version but is particularly used on calculators having the facilities root and reciprocal included. It does, however, offer considerable savings of keying effort with multiple entry.

Example 8. $3 \times 2 \times 3 + 18 + 2 - 3 \times 2 \times 18 \div 6 + 2 \times 6 = -78$
i.e. $ab - cd = (ab - d)c$

Other Facilities—Many facilities are available but, excluding the scientific functions, the most important are: per cent, register exchange and square root.

Even for those who find no difficulty with percentage calculations, the sophistication available can be attractive. In the example above the percentage value is calculated and displayed, and then with one more key stroke added to the principal.

Example 9. Calculate 8 per cent of £86 and add to the principal for the new price.
Key 86 ÷ % = 6.88
= 92.88

Register exchange—Given the abbreviation "exch" RE, or x↔, its use is best seen by an example.

Example 10. $5 \times 2 = 10$
Key 5 × 2 = 10
= 20
= 40
= 80
= 160
= 320
= 640
= 1280
= 2560
= 5120
= 10240
= 20480
= 40960
= 81920
= 163840
= 327680
= 655360
= 1310720
= 2621440
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application forms may be obtained, on receipt of a stamped addressed envelope, from the undersigned to whom completed forms should be returned within 10 days of the appearance of this advertisement.

F. J. Adams, Director of Education, Education Offices, Kingsway Cardiff.

SECONDARY Technical Studies continued

LEICESTERSHIRE

JUDITH MEADOW SECONDARY SCHOOL, Leicester (Comprehensive 11 to 16 from August, 1976, subject to Secretary of State's approval) 11 to 16

HEAVY CHAIRS AND TECHNICAL DRAWING

Required September to teach in Design Team situation, plus vacant because of third stage of expansion of this new school. Candidates should state some subject in which they are experienced in teaching and some in which they are experienced in technical drawing. Apply (no forms) with the names and addresses of two referees to the Head, from whom further particulars may be obtained (stamped addressed envelope).

LEICESTERSHIRE

RAWLINS UPPER SCHOOL

High Street, Quorn

Leicestershire

In the Leicestershire Plan for the reorganisation of Secondary Education

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LEICESTERSHIRE

THE HOWARTH COLLEGE

Leicester, Leicestershire

In the Leicestershire Plan for the reorganisation of Secondary Education

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SHEFFIELD

EDUCATION COMMITTEE

Leeds, Yorkshire

In the Leicestershire Plan for the reorganisation of Secondary Education

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BERKSHIRE

DEBORAH SCHOOL

Sharnham Road, Maidenhead

In the Leicestershire Plan for the reorganisation of Secondary Education

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LEEDS CITY COUNCIL

DEPARTMENT OF EDUCATION

Unless otherwise stated—
Closing date is fourteen days after the appearance of the advertisement.
In respect of Headships and Deputy Headships in all schools, and other posts in primary, middle and special schools, forms are available from, and returnable to, the Director of Education, Department of Education, Great George Street, Leeds LS1 3AE.
For other posts in Secondary and High Schools, application should be made to the Headteacher of the school concerned, giving full details and the names of two referees.
The post reference number should be quoted on all correspondence.
Requests for forms and details should be accompanied by a stamped, addressed envelope.
Posts specified in accordance with the requirements of Burnham Reports are automatically exempt from the provisions of the Sex Discrimination Act.

FIRST TEACHING APPOINTMENTS: PREFERRED POST SCHEME

Registration under the Preferred Post Scheme for posts tenable from September, 1976, has now ceased. Those candidates who did not register under the scheme should now make individual applications for vacancies as and when they are advertised.

SPECIAL SCHOOLS TEMPORARY POST

SCALE 1 + S.S.A. POST

E314
JOHN JAMIESON SCHOOL FOR PHYSICALLY HANDICAPPED CHILDREN (No. on Roll 173 2-6 years)
Holling Hill Drive, Leeds, LS16 2BN. Telephone: Leeds 65578.
Headteacher: Mr. A. Tennant.
Required for September, 1976, for one year only due to secondment of a teacher to work in the P.E. Department. The teacher appointed will be required to have some involvement in the teaching of a general subject at the junior level of the school. Previous experience in special education is not essential. Interested candidates wishing to visit the school should contact the Headteacher.

PRIMARY SCHOOLS HEADSHIP

W319
OLD EARLEY PRIMARY SCHOOL (No. on Roll 294 5-6 years)
Claydon Lane, Old Earley, Leeds, LS12 5EX. Telephone: Leeds 63734.
Application for the post of HEADTEACHER of this Primary School. The school is in Group 3 for salary purposes. The Headship becomes vacant on 1 September, 1976, on the retirement of the present headteacher. Further details may be obtained from the Department of Education.

DEPUTY HEADSHIPS

W320
STANLEY PRIMARY SCHOOL (No. on Roll 248 5-6 years)
School View, Stanley, Leeds, LS25 5JN. Telephone: Leeds 70999.
Headteacher: Mrs. R. Wyde.

AMENDED ADVERTISEMENT
Applications from suitably experienced teachers are invited for the post of DEPUTY HEADSHIP at this Group 4 Primary School. The post is a permanent one.
Applicants should be willing and able to play a full part in all areas of school activity. The successful candidate will take up appointment on 1 September, 1976.
Applicants who require further information are asked to contact the Headteacher at the school.
This post was previously advertised as a Group 5 Deputy Headship. Vacancies advertised for the post (Reference No. W323) are asked to accept, in writing, whether they wish their applications to stand.

W322
WORTH VALLEY JUNIOR MIXED AND INFANT SCHOOLS (No. on Roll 380 5-6 years)
West End Lane, Horsforth, Leeds, LS18 5JP. Telephone: Leeds 58219.
Headteacher: Mr. J. Brown.
Required for September, 1976, Deputy Headteacher, in this Group 5 Junior and Infant School.
Applicants should be willing to work with virtually grouped classes. Interest in movement education an advantage.

SECOND MASTER

W321
BRANTLEY PRIMARY SCHOOL (No. on Roll 312 5-6 years)
Hough Lane, Leeds, LS12 3JD. Telephone: Leeds 74109.
Headteacher: Mr. J. Ellis.
Applicants are invited from suitably qualified and experienced teachers for the post of SECOND MASTER of this Primary School. Salary will be Group 7. Details of the school are available on request.
Applicants should have administrative ability and a willingness to play a full part in the organization and development of the school.
This is a new post which will involve the successful candidate in expanding responsibilities within Phase 1 of the school's new buildings completed later in the year.

SCALE 2 POSTS

NW330
COORIDGE PRIMARY SCHOOL (No. on Roll 540 5-6 years)
Tomball Drive, Leeds, LS16 7DH. Telephone: Leeds 67363.
Headteacher: Mrs. J. Brown.
Required for September, 1976, experienced class teacher for 7-8 year class. Ability to teach in all areas of the curriculum with initiative and confidence. Sound experience in the teaching of Practical Mathematics required.

W323
BEVERLY STREET PRIMARY SCHOOL (No. on Roll 320)
Tomball Drive, Leeds, LS16 7DH. Telephone: Leeds 74256.
Headteacher: Mr. J. Brown.
Required for September, 1976, a teacher for a 7-8 year class with ability to teach in all areas of the curriculum with initiative and confidence. This is a new post which will involve the successful candidate in expanding responsibilities within Phase 1 of the school's new buildings completed later in the year.

SCALE 1 POSTS

W324
BEVERLY STREET PRIMARY SCHOOL (No. on Roll 320)
Tomball Drive, Leeds, LS16 7DH. Telephone: Leeds 74256.
Headteacher: Mr. J. Brown.
Required for September, 1976, a teacher for a 7-8 year class with ability to teach in all areas of the curriculum with initiative and confidence. This is a new post which will involve the successful candidate in expanding responsibilities within Phase 1 of the school's new buildings completed later in the year.

W325
CHAPPEL ALLERTON PRIMARY SCHOOL (No. on Roll 540 5-6 years)
Harmate Road, Leeds, LS17 3PD. Telephone: Leeds 62435.
Headteacher: Mr. J. Brown.
Required for September, 1976, teacher for General Subjects. Ability to play the piano and to teach music/piano a recommendation.

NW331
COORIDGE PRIMARY SCHOOL (No. on Roll 540 5-6 years)
Tomball Drive, Leeds, LS16 7DH. Telephone: Leeds 67363.
Headteacher: Mrs. J. Brown.
Required for September, 1976, teacher to assist in the school, supporting situation. This post is suitable for new entrants to the profession.

NW332
DTLEY ACHFIELD FIRST SCHOOL (No. on Roll 154 years)
Weston Lane, Otley, Leeds, LS21 2DB. Telephone: Otley 3341.
Headteacher: Mrs. J. Brown.
Required for September, 1976, teacher for class 12 2-6 year olds, working an integrated day in a semi-open plan situation.

NW333
SPRING BANK PRIMARY SCHOOL (No. on Roll 198 5-6 years)
Spring Road, Leeds, LS16 1AD. Telephone: Leeds 76279.
Headteacher: Miss S. R. Gifford.
Required for September, 1976, experienced teacher for new admission class of 5 year old children from children. Ability in French, Mathematics and Music particularly desirable. Willing to work in a shared programme.

NW334
GUISELEY C. OF E. JUNIOR (CUMM) SCHOOL (No. on Roll 330 7-11 years)
The Crescent, Guiseley, Leeds, LS20 9RT. Telephone: Guiseley 71570.
Headteacher: Mrs. J. Robinson.
Required for September, 1976, teacher for 8-9 year olds. Ability to assist in the school as an all-rounder. Application forms may be obtained from the Director of Education, Great George Street, Leeds, LS1 3AE. Completed forms should be returned to the Acting Headteacher (Mr. E. Manning) at the school.

E315
ABERFORD C. OF E. CONTROLLED JUNIOR AND INFANTS' SCHOOL (No. on Roll 128 5-11 years)
Aberford, Leeds, LS25 3TA. Telephone: Aberford 102.
Headteacher: Mr. J. C. W. Gardner, M.B.E.
Required for September, 1976, teacher for a class of Upper Infants and Lower Infants. This is an old school in a pleasant country area.

E316
ST. MARTIN'S R.C. SECONDARY SCHOOL (No. on Roll 580 10-11 years)
Harrogate Road, Leeds, LS14 8AR. Telephone: Leeds 69494.
Headteacher: Mr. P. A. Kennedy, M.B.E.
Required for September, 1976, (1) C.E. OF MUSIC DEPARTMENT, a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W325
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W326
PUDSLEY GRAMMAR SCHOOL (No. on Roll 960 mixed 11-18 years)
Richardson Lane, Pudsey, Leeds, LS22 7NT.
Headteacher: Mr. J. R. C. Smith, B.A.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

NW335
BLENNYHILL MIDDLE SCHOOL (No. on Roll 100 mixed 9-13 years)
Woodhouse Lane, Leeds, LS16 5BB. Telephone: Leeds 65588.
Headteacher: Mr. J. R. C. Smith, B.A.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W327
ROTHILLAN SCHOOL (No. on Roll 970)
Lillington, Wakefield, Telephone: Wakefield 23115.
Headteacher: Mr. A. Leach, M.A.
Required for September, 1976, a Deputy Headteacher (Group 5N). The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W328
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W329
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Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

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Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
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INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

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Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

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Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
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Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W336
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Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

SCALE 2/3 POST
E316
ST. MARTIN'S R.C. SECONDARY SCHOOL (No. on Roll 580 10-11 years)
Harrogate Road, Leeds, LS14 8AR. Telephone: Leeds 69494.
Headteacher: Mr. P. A. Kennedy, M.B.E.
Required for September, 1976, (1) C.E. OF MUSIC DEPARTMENT, a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

SCALE 2 POSTS
W325
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

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PUDSLEY GRAMMAR SCHOOL (No. on Roll 960 mixed 11-18 years)
Richardson Lane, Pudsey, Leeds, LS22 7NT.
Headteacher: Mr. J. R. C. Smith, B.A.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

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Woodhouse Lane, Leeds, LS16 5BB. Telephone: Leeds 65588.
Headteacher: Mr. J. R. C. Smith, B.A.
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Lillington, Wakefield, Telephone: Wakefield 23115.
Headteacher: Mr. A. Leach, M.A.
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Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W338
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

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INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W340
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

SCALE 2/3 POST
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SCALE 2 POSTS
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Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W326
PUDSLEY GRAMMAR SCHOOL (No. on Roll 960 mixed 11-18 years)
Richardson Lane, Pudsey, Leeds, LS22 7NT.
Headteacher: Mr. J. R. C. Smith, B.A.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

NW335
BLENNYHILL MIDDLE SCHOOL (No. on Roll 100 mixed 9-13 years)
Woodhouse Lane, Leeds, LS16 5BB. Telephone: Leeds 65588.
Headteacher: Mr. J. R. C. Smith, B.A.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W327
ROTHILLAN SCHOOL (No. on Roll 970)
Lillington, Wakefield, Telephone: Wakefield 23115.
Headteacher: Mr. A. Leach, M.A.
Required for September, 1976, a Deputy Headteacher (Group 5N). The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W328
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W329
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W330
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W331
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W332
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W333
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W334
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W335
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W336
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W337
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W338
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W339
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W340
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

SCALE 2/3 POST
E316
ST. MARTIN'S R.C. SECONDARY SCHOOL (No. on Roll 580 10-11 years)
Harrogate Road, Leeds, LS14 8AR. Telephone: Leeds 69494.
Headteacher: Mr. P. A. Kennedy, M.B.E.
Required for September, 1976, (1) C.E. OF MUSIC DEPARTMENT, a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

SCALE 2 POSTS
W325
INTAKE HIGH SCHOOL (No. on Roll 646 13-18 years)
Chatterley Lane, Leeds, LS15 1AH. Telephone: Leeds 481.
Headteacher: Mr. C. W. Gardner, M.B.E.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.

W326
PUDSLEY GRAMMAR SCHOOL (No. on Roll 960 mixed 11-18 years)
Richardson Lane, Pudsey, Leeds, LS22 7NT.
Headteacher: Mr. J. R. C. Smith, B.A.
Required for September, 1976, a teacher of THAMAT. The school is a well-qualified and experienced colleague in a sought-after of co-ordinating and developing choral and instrumental work in the school. The school is already involved in brass, woodwind and guitar.



Somersest

Applications are invited from suitably qualified and experienced teachers for the following posts. Unless otherwise stated:

- (a) Duties to commence September 1978.
 - (b) Application forms and details (S.A.E. fee) from the Heads at the schools.
 - (c) Closing date 10th May, 1978.
- Please quote reference 23/4 on correspondence.

Somersest Education and Cultural Services Committee

Applications are invited, particularly from newly qualified teachers, for a small number of posts as assistant teachers, Scale 1. Successful applicants will be appointed to the Committee's permanent staff and will be employed in primary schools.

Application forms and details for this post (S.A.E.) from Staffing (T) Section, Education Department, County Hall, Taunton. Closing date 3rd May.

YOUTH TUTOR

Court Fields Comprehensive School, Wellington

Salary Burnham Scale 3.

The person appointed will be required to work with pupils, former pupils and other young people to foster opportunities for leisure pursuits.

The School is an 11-18 comprehensive with 731 boys and girls on roll. It serves Wellington and the surrounding villages which include areas of expanding housing estate development and there is ample scope for the person appointed to do general youth work in the school and in the community. Accommodation is available at the school as a base for youth activities. Closing date 3rd May.

Further Education

Bridgwater College, Bridgwater

Lecturer 1 in Liberal Studies (with Humanities or Social Sciences).

A Lecturer 1 to teach Liberal Studies to part-time and full-time courses including craft, technician and ONC. Candidates should also offer an appropriate academic subject to A/S level. This post might particularly suit joint honours graduates in Humanities or Social Sciences, especially with interests in History. Salary in accordance with Burnham FE scale 1.

Application forms and details (foolscap S.A.E.) from the Principal, Bridgwater College, Broadway, Bridgwater. Closing date 7th May.

Somersest College of Arts and Technology, Taunton

Lecturer Grade 1, to teach electrical installation subject to both 'O' and 'A' level and to teach/prepare subject for Distribution Apprentices in the Electricity supply industry. The ability to teach on a broad range of courses including electrical engineering science for technician courses would be an advantage. Applicants should possess electrical installations qualifications and preferably H.N.C. in Electrical and Electronic engineering together with industrial experience and teaching qualification.

Lecturer Grade 1, in professional Cookery, to teach theory and practical Cookery and Pastry work to all full-time and day release students taking O and G 705/706 courses. A minimum of 5 years' trade experience is required and teaching experience would be an advantage. Preference will be given to holders of the O and G 706 (3) advanced craft certificate and a further education teacher's certificate. The ability to teach hygiene to R.S.H. standard would be an advantage.

Lecturer Grade 1, in English, to teach mainly GCE 'O' level English language to courses throughout the college. An interest in English literature and drama would be an advantage.

Lecturer Grade 1, in English, to teach mainly GCE 'O' level English and Communications. The ability to teach History to GCE 'O' level would be an advantage.

Lecturer Grade 1, in General Studies to teach mainly students on part-time, day release and block release courses. The ability to assist with Remedial English courses would be an advantage.

Lecturer Grade 1, in Hotel Accounting, to teach hotel book-keeping, accounts and food costing to students taking ordinary National Diploma, Hotel Reception and City and Guilds full-time courses. Applicants must have a degree in hotel administration and/or a professional accountancy qualification. A minimum of three years' appropriate experience in a hotel and catering administrative post, or in management/accounting in the hotel industry. The ability to teach some theory of hotel reception would be an advantage. Salary scale £2,469-£4,377 p.a. Starting salary dependent upon qualification and experience. Application forms and details S.A.E. from the Clerk to the Governor, Somersest College of Arts and Technology, Wellington Road, Taunton. Closing date 7th May.

Strode College, Street

This tertiary college provides comprehensive education facilities for students over 16 in Mid-Somersest, including all GCE 'A' level work in the area.

PHYSICAL EDUCATION TEACHER (Woman)

Applications are invited for appointment as Lecturer Grade 1 from 1st September, 1978. A large sports hall and playing fields are available. Ability and interest to contribute to some teaching in English or Social Studies or other areas would be an advantage.

Salary: £2,469 to £4,377 p.a., increasing by £312 p.a. from 1st April, 1978. Starting salary depends on qualifications and experience.

Further particulars and application forms obtainable from the Principal, Strode College, Church Road, Street, Somersest BA16 0AB, to whom applications should be sent by 7th May, 1978 (S.A.E.).

Secondary

Crispin Comprehensive, Street

(11-16 mixed, 1,140)

Woman teacher to be HEAD OF PHYSICAL EDUCATION DEPARTMENT, scale 3. The department consists of six staff. Playing fields are adjacent to the school.

HEAD OF HUMANITIES, scale 4. Applicants should be qualified also to take charge of the school's remedial department which is an important aspect of the appointment.

FRENCH and GERMAN, scale 1. Language Laboratory. Apply to the Head at the school, giving full career details and names of two referees.

Kingsmead Comprehensive, Williscroft, Nr. Taunton

(11-16 mixed, 510)

HEAD OF HOME ECONOMICS DEPARTMENT, scale 2. To include some knowledge and experience of fabrics and needlecraft.

Whitstone Comprehensive, Shepton Mallet

(11-16 mixed, 750-1)

HEAD OF REMEDIAL DEPARTMENT, scale 3.

This is an important post in an expanding school.

West Somersest Comprehensive, Minehead

(13-18 mixed, 1,087)

The school catchment area comprises Exmoor, the Brendon and Quantock Hills, as well as the coastal villages.

Qualified teacher of BIOLOGY, scale 1, to teach across the age and ability range. Much examination work, C.S.E., 'O' and 'A' level, is undertaken in the subject, in which the successful candidate must be involved.

Bishop Fox's Girls' Grammar, Taunton

(11-18, 985)

CHEMISTRY Graduate, scale 2, to share the teaching in this subject to 'O' and 'A' level, both Nuffield and traditional syllabuses used. Well-equipped laboratories and trained technicians.

Chilton Trinity Comprehensive, Bridgwater

(11-16 mixed, 1,030)

Teacher of ART, scale 1. Three teachers, scale 1, each offering one or more of the following subjects: Mathematics, Science, English, Boys' P.E., R.E. and French.

Preston Comprehensive, Yeovil

(11-18 mixed, 646)

Teacher, scale 1, for REMEDIAL DEPARTMENT. Applicants must have been trained as Remedial Specialist or hold specialist remedial qualifications.

Frome College

(formerly Frome Grammar), Frome

(13-18 comprehensive, 1,240, 170 in sixth, and P.E. College combined, on separate site).

Experienced teacher of FRENCH to teach at all levels of ability up to 'A' level. Scale 2 for suitable applicant. Applicants must be prepared to assume responsibility within the Department.

Ability to offer a second language will be an advantage. Experienced teacher of ENGLISH, scale 2, for suitable applicant, to teach at all levels of ability. Applicants must be prepared to accept some responsibility within the department and/or in the College.

Graduate to teach CHEMISTRY at all levels. Scale 2 for suitable applicant. Applicants must be prepared to assume responsibility within the Department. Nuffield Course followed at 'O' and 'A' level. Applications by letter to the Principal, giving full details and names of two referees as soon as possible. Further details on request.

Sydenham Comprehensive, Bridgwater

(11-16 mixed, 1,000)

Teacher of NEEDLECRAFT, scale 1, to work in a team of four Needlecraft and Home Economics teachers in well-equipped rooms. Applicants will be expected to teach to C.S.E. level and be able to develop their own ideas. An interest in Home Economics will be an advantage. A flair for creative needlework especially desirable.

Blake Comprehensive, Bridgwater

(11-16 mixed, 830)

There will be vacancies, all scale 1, in September for teachers in the undermentioned subjects. Applicants should write to the Head giving full details of education, professional training and subjects offered, together with the names of two referees.

COMBINED SCIENCE, 1st and 2nd years, and General Science up to C.S.E. level. An ability to teach some Mathematics would be an additional recommendation.

MATHEMATICS, throughout the school up to C.S.E. and 'O' level.

MATHEMATICS, with a special interest in devoting a proportion of the time-table to teaching some of the less able pupils in smaller groups.

FRENCH, up to C.S.E. and 'O' level, with an emphasis on oral work. An audio-visual course is in use.

ENGLISH, throughout the school up to C.S.E. or 'O' level. Opportunities for taking classes for Drama could be made available.

To assist with the REMEDIAL TEAM, to teach English with small groups and work with pupils extracted from English classes on special reading skills.

To join the DESIGN DEPARTMENT TEAM to teach Home Economics. An interest in and knowledge of Needlecraft and Fabrics is desirable so that the teacher can play a full part in the 1st year mixed integrated design course.

Ladysmead Secondary, Taunton

(5 F.E. mixed, 700) Plans for re-organisation as 11-16 comprehensive being considered.

Required for September, 1978, SECOND MISTRESS, Second Deputy—Group 9. The successful candidate will join the Senior Staff team in the overall running of the school and its development as an 11-16 comprehensive. She will have special responsibility for Girls' Welfare, the Pastoral Care Organisation in addition to her academic and administrative duties. This rapidly growing school has close and active links with the community and an ability to develop this field is an essential requirement of the post.

Haygrove Comprehensive, Bridgwater

(11-16 mixed, 1,000, formed in 1973, by the amalgamation of two grammar and one modern school).

Assistant, scale 1, for HISTORY, up to and including 'O' level. (1815-1939)

Assistant, scale 1, for HOME ECONOMICS and NEEDLECRAFT.

Assistant, scale 1, or 2, for suitably qualified candidate, for GERMAN with some French. Closing date 28th April.

Hulse's V.C. Grammar School, South Road, Taunton

(838 Boys; 220 in sixth)

Well qualified GERMAN specialist to share teaching from 2nd to 7th year, including 'O' and 'A' level work. Graduate preferred with interests in strong, working German exchange scheme and modern teaching methods. Scale 2 available for suitably qualified candidate. Temporary accommodation available. Applications by letter enclosing two recent testimonials and naming two referees to the headmaster. Closing date 28th April.

Court Fields Comprehensive, Wellington

(11-16 mixed, 700 on roll)

Teacher of ENGLISH and HUMANITIES, Scale 1. Work will be mainly in the Lower School and a thematic approach, in conjunction with the Resources Centre, is required. Closing date 3rd May.

Hulse Episcopi School, Langport

(11-16 comprehensive, 1,000 on roll)

Scale 1 vacancies exist for teachers to CSE/GCE in the following subjects:

MATHEMATICS—SMP schemes, subject suite, to join strong department.

GEOGRAPHY—Teacher appointed will join Humanities team. Combined Humanities syllabus in Lower School. Possibility of CSE work in Geography available.

SCIENCE—Physics and/or Physical Sciences class essential. Combined science syllabus in Lower School. Examination work in Physics/Physical Sciences available.

FRENCH—To join Modern Languages department. Subsidary German an advantage though not essential. Both subjects taught to 'O' and 'CSE' levels. Language Lab.

ART and NEEDLEWORK Special rooms available. keen interest in fabric printing and design essential. Closing date for Hulse Episcopi posts 3rd May.

SECONDARY

Scale 2 Posts continued

LINCOLNSHIRE

EDUCATION COMMITTEE

WINTON, COVLEYS

SECONDARY SCHOOL

11-16 mixed, 1,000

Required for September, 1978:

(a) SCIENCE MASTER (Salary £2,564 to £3,791).

Required to change of liberal to teach to C.S.E. level. Experience in and/or knowledge of the following subjects: Biology, Chemistry, Physics, Mathematics, English, History, Geography, Art, Music, and Physical Education. Applicants should be qualified to teach to C.S.E. level and be able to develop their own ideas. An interest in Home Economics will be an advantage. A flair for creative needlework especially desirable.

Applications by letter to the Headmaster, with the names of two referees, to the Headmaster, Winton, Covleys, Winton, Lincolnshire. Closing date 7th May.

OLDHAM

EDUCATION COMMITTEE

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TEACHING VACANCIES

SEPTEMBER 1978

UNLESS OTHERWISE STATED

SECONDARY

SCALE 2

BOYS P.E. TEACHER

Aspirant County Secondary School, South Road, Aggildon, Wigan. Mixed 11-16 (Group 7) 420 on roll. Telephone 01925 401000. Required for September (August 1978). Application forms obtainable from and returnable to the Headmaster by the 14th May.

SCALE 1

MATHEMATICS TEACHER

Orell, Abraham Guest County Secondary School, Orell Road, Orell, Wigan. (880 Boys and Girls). Application forms obtainable from and returnable to the Headmaster by Monday, 10th May.

SCALE 1

WELL QUALIFIED MATHEMATICS TEACHER

Hindley and Abram Grammar School, Park Road, Hindley, Wigan. (576 Boys and Girls; 107 Sixth Form). U.C.E. work available for suitable candidate. Letter of application with the names and addresses of two referees should be sent to the Headmaster. Further particulars will be sent on application.

SCALE 1

GERMAN AND GENERAL SUBJECTS

Orell, Abraham Guest County Secondary School, Orell Road, Orell, Wigan. (880 Boys and Girls). To share teaching of German in first and second years with some General Subjects. Application forms and further information obtainable from and returnable to the Headmaster by the 7th May.

The following Scale 1 posts are available for this newly reorganised 11-16 Comprehensive School from Autumn Term 1978.

R.E. with either GEOGRAPHY or HISTORY

ENGLISH

Leigh, Bedford High School, Manchester Road, Leigh. Application forms available from and returnable to the Headmaster by 7th May.

Staff required for August 1978.

SCALE 3 POSTS

ENGLISH

Second in department, 'O' level and C.S.E. examination work—well established.

REMEDIAL

Second in the department.

SCALE 2 POSTS

MODERN LANGUAGES

Proficiency able to offer German and French.

NEEDLEWORK

'O' level and C.S.E. examination work—well established.

SCALE 1 POSTS

HOUSECRAFT

SCIENCE

Help with music desirable and ability to offer other general subjects an advantage.

GENERAL SUBJECTS

With slow learners.

Teacher of ENGLISH and HUMANITIES, Scale 1. Work will be mainly in the Lower School and a thematic approach, in conjunction with the Resources Centre, is required. Closing date 3rd May.

TEACHERS for:

1. HISTORY

To take 'O' level/C.S.E. classes. Scale 2 available for suitable candidate.

2. ART

Teacher, scale 1, for FRENCH, to teach to C.S.E. level. Experience in and/or knowledge of the following subjects: Biology, Chemistry, Physics, Mathematics, English, History, Geography, Art, Music, and Physical Education. Applicants should be qualified to teach to C.S.E. level and be able to develop their own ideas. An interest in Home Economics will be an advantage. A flair for creative needlework especially desirable.

Applications by letter to the Headmaster, with the names of two referees, to the Headmaster, Winton, Covleys, Winton, Lincolnshire. Closing date 7th May.

3. BOYS CRAFTS/TECHNICAL DRAWING

4. MUSIC

Scale 2 available for suitable candidate.

5. HISTORY/GEOGRAPHY

AND ALLIED SUBJECTS

6. SHORTHAND/TYPING

7. PHYSICS

Graduate to take 'O' level/C.S.E. classes. An ability to teach to C.S.E. level would be an advantage. Both subjects taught to 'O' and 'CSE' levels. Language Lab.

ART and NEEDLEWORK Special rooms available. keen interest in fabric printing and design essential. Closing date for Hulse Episcopi posts 3rd May.

Applications by letter to the Headmaster, with the names of two referees, to the Headmaster, Winton, Covleys, Winton, Lincolnshire. Closing date 7th May.

Applications by letter to the Headmaster, with the

Cheshire

HEADS & DEPUTY HEADS

SENIOR MISTRESS

Norton Priory Comprehensive School
Castletown Avenue East, Castletown, Runcorn
WA7 2NT
(11-18 Co-educational Comprehensive—1,620 on roll)
Group 12

Required for the commencement of the Autumn Term, 1976. The present holder of the post has recently been appointed to a post in the same school. For a candidate with good qualifications and experience in the field of education, a salary of £10,000 p.a. plus pension and other benefits will be available. Further details of this post will be sent with the application form. Help with housing if required. Closing date for applications: Wednesday, 12th May, 1976.

HEADS OF DEPARTMENTS

MODERN LANGUAGES—Scale 2/3

All Hallows Catholic High School
Brooklands Avenue, Macclesfield
Required September, 1976. A suitably qualified and experienced teacher to develop the teaching of French and German in this 11-18 mixed Comprehensive School. This is a new post in a school which recently became the first all-ability intake. In September there will be 850 pupils on roll and two purpose-built language rooms will be available.

HEAD OF MUSIC

Appleton Hall County Grammar School
Hall Drive, Appleton, Warrington WA4 5JL
Required for September. Scale 2 (for a highly qualified and experienced teacher Scale 3 could be available). Experience of 'O' and 'A' level work is necessary and of orchestral work very desirable. Appleton Hall is a four-form entry mixed Grammar School. It has been proposed that it should become an 11-18 Comprehensive School in 2/3 years. Application forms (s.a.s., please) should be returned by 7th May.

1. MUSIC—Scale 2

English Martyrs R.C. High School
Poplars Avenue, Warrington
Required for September, 1976, for this co-educational school of 1,010, with developing Sixth Form.
1. Visiting teachers of strong brass and woodwind. New ensembles considered.
2. Courses to C.S.E., 'O' and 'A' levels.

HEAD OF REMEDIAL DEPARTMENT

Great Sankey High School
Barrow Hall Lane, Great Sankey, Warrington
Tel: 0925/72,229/6523
New comprehensive school for 11-18 years (mixed). Initially Group 8. Opening September, 1976. Roll 900 initially, rising to 1,200 approx.
Required for September, 1976, a well-qualified and experienced teacher to assume responsibility for remedial work of children with special learning difficulties. The successful applicant will need to liaise closely with the teacher primary schools and to play a positive role in the school. This is an important position in a new school and is a Scale 2 appointment with the possibility of further progression as the post develops.
Prospective candidates should send for details to the Head-teacher, Great Sankey High School, c/o High School, Heath Road, Warrington, by enclosing a stamped addressed envelope.
Completed forms together with a letter of application should be returned by Friday, 7th May, 1976.

HEAD OF CAREERS TEAM

Wimslow County Grammar School for Girls
Dean Row Road, Wimslow
900 Girls
Scale 4. With English or Geography as a teaching subject (approximately two-thirds teaching timetable). A suitably qualified and experienced teacher required September to organise career education.
The school will eventually be recognised as a co-educational 11-18 comprehensive school. Closing date, Thursday, 6th May.

HEAD OF ENGLISH FACULTY

Woodford Lodge County Comprehensive School
Woodford Lodge West, Winsford, CW9 4EH
Required for September, 1976. Scale 4 (Re-advertisement). Existing candidates will be reconsidered and need not re-apply. Woodford Lodge is a mixed 11-18 Comprehensive School with an extended number on roll in September, 1976, of 1,600. The school, which opened in 1971, is purpose built and has excellent facilities in all departments.
A well-qualified and experienced teacher is required for this post which is a senior position in the school and involves leading a large team of enthusiastic teachers. Well-established courses in 'A', 'O' and C.S.E. and O.S.E. level and the Faculty enjoys excellent facilities including extensive Audio-Visual equipment.
A teacher with considerable classroom and organisational experience together with the energy, enthusiasm and vision to continue the excellent development in progress is sought.

SCALE 2 POSTS & ABOVE

1. P.E.

2. MATHEMATICS

Culcheth High School
Withington Avenue, Culcheth, Warrington, WA3 4JQ
Mixed 11-18 Comprehensive Roll: 1,300
Approximately
Required for 1st September, 1976:
1. Teacher in charge of Girls' P.E. and Games. Scale 2.
2. Assistant Head Mathematics Department. Scale 2.
Full details of posts and of the school will be provided. Closing date 12th May, 1976.

PHYSICS

Nantwich and Acton Grammar School
Welsh Row, Nantwich
Required in September, Master or Mistress to teach Physics throughout the school. For a candidate with good qualifications or experience some 'A' level work and a Scale 2 post could be available.

SCALE 1 POSTS

1. ART

2. GEOGRAPHY

3. HOME ECONOMICS

4. MATHEMATICS

5. RELIGIOUS EDUCATION

6. SCIENCE

7. TEACHER IN CHARGE OF ARTS

8. TEACHER IN CHARGE OF MUSIC

9. TEACHER IN CHARGE OF PHYSICS

10. TEACHER IN CHARGE OF CHEMISTRY

11. TEACHER IN CHARGE OF BIOLOGY

12. TEACHER IN CHARGE OF HISTORY

13. TEACHER IN CHARGE OF ENGLISH

14. TEACHER IN CHARGE OF MODERN LANGUAGES

15. TEACHER IN CHARGE OF REMEDIAL DEPARTMENT

16. TEACHER IN CHARGE OF CAREERS TEAM

17. TEACHER IN CHARGE OF SPECIAL EDUCATION

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INDEPENDENT continued

Physical Education

Herts of Department

YORKSHIRE
QUEEN MARGARET'S SCHOOL
Headmaster. Fully qualified (N.C.E.) and experienced. Salary £10,000. Applications to the Headmaster, The School, York.

Other Assistants

CHESTER
THE KING'S SCHOOL
Headmaster. Fully qualified (N.C.E.) and experienced. Salary £10,000. Applications to the Headmaster, The School, Chester.

GLOUCESTERSHIRE
ST. ANDREW'S SCHOOL
Headmaster. Fully qualified (N.C.E.) and experienced. Salary £10,000. Applications to the Headmaster, The School, Gloucester.

HERTFORDSHIRE
ST. ANDREW'S SCHOOL
Headmaster. Fully qualified (N.C.E.) and experienced. Salary £10,000. Applications to the Headmaster, The School, Hertford.

KENT
THE KING'S SCHOOL
Headmaster. Fully qualified (N.C.E.) and experienced. Salary £10,000. Applications to the Headmaster, The School, Kent.

NORFOLK
THE KING'S SCHOOL
Headmaster. Fully qualified (N.C.E.) and experienced. Salary £10,000. Applications to the Headmaster, The School, Norfolk.

UNITED WORLD COLLEGE OF THE ATLANTIC
Immediate applications are invited for the following vacancies:
TEACHER OF ENGLISH AS A FOREIGN LANGUAGE
(Departmental responsibility)
DEPUTY HEAD OF MATHEMATICS
Owing to the recent appointment of the present holder of this position, more senior and experienced applications are invited with a possibility of early promotion to Head of Department. This appointment will take effect either in September, 1976, or in January, 1977. Candidates will be expected to have considerable teaching experience. Suitably qualified applicants for the previous post advertised will be considered.

ASSISTANT TEACHER OF MODERN WORLD HISTORY
Opportunity to develop special courses in European and/or Latin American History. Previous teaching experience necessary.

DIRECTOR OF EXTRACURRICULAR ACTIVITIES
The Extracurricular Department exists to make the College facilities and programme available through short courses to young people from the country and abroad. Applicants should ideally have experience of youth work and some expertise and qualifications in outdoor pursuits. The exact details of the appointment are open to negotiation. Starting date by mutual agreement between September and January.

NORTHAMPTONSHIRE
ST. ANDREW'S SCHOOL
Headmaster. Fully qualified (N.C.E.) and experienced. Salary £10,000. Applications to the Headmaster, The School, Northampton.

SOMERSET
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Headmaster. Fully qualified (N.C.E.) and experienced. Salary £10,000. Applications to the Headmaster, The School, Somerset.

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Headmaster. Fully qualified (N.C.E.) and experienced. Salary £10,000. Applications to the Headmaster, The School, Sussex.

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Headmaster. Fully qualified (N.C.E.) and experienced. Salary £10,000. Applications to the Headmaster, The School, Surrey.

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South Cheshire College

All posts are open to male and female applicants.
Principal Lecturer Engineering
Senior Lecturer Engineering (Craft)
Senior Lecturer GCE (Administration)
Senior Lecturer Art
Senior Lecturer Catering
Senior Lecturer Management Studies
Lecturer II Management Studies
Lecturer II Physical Education
Lecturer II Hairdressing
Lecturer I Bus & Management Studies
Lecturer I Vehicle Body Trimming
Lecturer I Accommodation Operations
Lecturer I Music
Lecturer I English
(two posts)

Salary:
P.L. £5940-£6642 L.H. £3279-£5493
S.L. £5031-£5955 L.L. £2469-£4377

THE COLLEGE
Dane Bank Ave.
Crewe CW2 8AB
Telephone 69133

The College of Further Education Plymouth

HEAD OF DEPARTMENT OF HUMANITIES (NEW POST)

The post offers exciting opportunities for a person with imagination, initiative and drive to bring together and develop several areas having humanistic loyalties at their centre. This new post, created by order of the Council, will be responsible for the coordination and administration of the Humanities Department. The post holder will have extensive experience in the teaching and learning of Humanities, and will also have had substantial experience in the management of the Department. The post holder will be responsible for the coordination and administration of the Humanities Department, and will also have had substantial experience in the management of the Department. The post holder will be responsible for the coordination and administration of the Humanities Department, and will also have had substantial experience in the management of the Department.

The College of Further Education Plymouth
Kings Road, Devonport, PLYMOUTH PL1 8QG
Completed forms should be returned as soon as possible.

Lancashire County Council

FURTHER EDUCATION

LYTHAM ST. ANNES COLLEGE OF FURTHER EDUCATION
1st September, or earlier if possible.
Graduate or equivalent to teach Law/Commerce, and other business subjects.

LECTURER I—Forms from/to
The Principal, College of Further Education, Clifton Drive South, Lytham St. Annes.

W.R. TUBSON COLLEGE, PRESTON
September 1976
COURSE TUTOR—N.N.E.B. Course

1. LECTURER II
Course Tutor—Work preparation course handicapped students.
2. LECTURER II
Tutor Librarian (Chartered Librarian).

3. LECTURER I
Construction Studies. Craft Technicians Courses.
4. LECTURER I
Forms from/to The Chief Administrative Officer, St. Vincent Road, Fulwood, Preston PR2 4UR.

MURNLEY COLLEGE OF ARTS AND TECHNOLOGY
As soon as possible
Department of Child Study & Community Care—Lecturer in Social Services Work.

LECTURER I
Forms from/to Burnley College of Arts and Technology, Omaroo Road.

HANDSWORTH AND ERDINGTON TECHNICAL COLLEGE

Vice-Principal

The retirement of the Vice-Principal of this Group IV College creates a vacancy from 1st September, 1976.

Details of the post and application forms are obtainable from the Principal, Handsworth and Erdington Technical College, Whitehead Road, Aston, Birmingham B6 6EU.

Closing date for applications—3rd May, 1976.
There is a scheme for assistance with removal expenses.

BIRMINGHAM

LONDON BOROUGH OF RICHMOND UPON THAMES

Applications are invited for the post of

PRINCIPAL

(£10,839 - £11,349)
Of a new TERTIARY COLLEGE (Group VII) to be established in September, 1977, replacing the Richmond College of Technology and two secondary (16-18) colleges, Sharn College and Thames Valley College, and to be responsible for all post-16 vocational education in the borough. The Principal will be expected to take up the appointment (as Principal-Designate) in September, 1976.

Further details and application forms returnable by 12th May, 1976, from Director of Education, Regal House, London Road, Twickenham TW1 3QB.

Geography

LONDON, S.W.1
The Principal of the College of Further Education, Richmond upon Thames, is seeking a qualified and experienced teacher to teach Geography. The post holder will be responsible for the coordination and administration of the Geography Department, and will also have had substantial experience in the management of the Department. The post holder will be responsible for the coordination and administration of the Geography Department, and will also have had substantial experience in the management of the Department.

Applications should be sent to the Headmaster, The School, Surrey.

Zambia

Economist-Tracer Project (University of Zambia)

To initiate and carry out research in own field of specialisation in conjunction with other members of project which is an on-going research/documentation unit and to contribute expertise in economics and economic aspects of planning to the work currently being undertaken by Project; undertake collection and interpretation of research data in form more directly meaningful in terms of national planning, ensure that adequate mechanisms are set up for distribution and use of Project's data and research results within Zambia and elsewhere. Liaison with persons and organisations concerned with educational aspects of planning and human resource development will be of particular importance. Applicants aged between 25-35 years should have a PhD or MA in Economics preferably with emphasis in development planning. A background in sociology and experience in programming would be an advantage. Appointment 3 years.

Salary according to qualifications and experience plus variable tax free overseas allowance in range £1,350-£3,475 pa. Other benefits include free family passages, paid leave, children's education allowances and free accommodation and medical attention. All emoluments paid by the British Government. Applicants should be citizens of the United Kingdom. For further information and application forms, please apply giving age and brief details of qualifications and experience to:—
Appointments Officer,
Room E901,

Ministry of Overseas
Development
Stag Place,
London, SW1E 5DH.



The British Council

invites applications for the following posts:—

Teaching Adviser (Brazil)

Sociedade Brasileira de Cultura Inglesa, Rio de Janeiro Graduate with TEFL qualification and experience. Salary: £6524 pa. Benefits: annual bonus £750; outfit grant; medical scheme. Two-year contract, renewable. 76 UO 60

ELT Adviser (Mali)

Ministry of Education, Institut Pedagogique National, Bamako Teacher-training, in-service training, materials production, coordination of ELT. Degree, postgraduate TEFL qualification, extensive overseas TEFL experience, including teacher training and textbook/materials production experience; good knowledge of French essential. Salary: £5001-£6845 pa. Benefits: overseas and children's allowances; furnished accommodation; annual passage-paid leave. Two-year contract. 76 HE 13

Lector in English (Yugoslavia)

University of Belgrade Degree in English and relevant TEFL experience essential. TEFL qualification desirable. British nationals, preferably single. Salary: 4400 new dinars per month plus sterling subsidy of £1191 pa, paid in Britain. Benefits: medical treatment; employers' portion of superannuation; rent allowance. One-year contract, renewable. 76 SU 64

Lecturer in English Language (Czechoslovakia)

Charles University, Prague Arts degree from a British university; a postgraduate TEFL qualification, knowledge of applied linguistics and relevant TEFL experience. British nationals, preferably single. Salary: £4389-£5409 pa net. Benefits: free accommodation; medical scheme; employers' portion of superannuation; overseas and child allowances. One-year contract, renewable. 76 SU 22

Return fares are paid. Local contracts guaranteed by the British Council.

Please write, briefly stating qualifications and length of appropriate experience; quote relevant reference number and title of post for further details and an application form to The British Council (Appointments), 65 Davies Street, London W1Y 2AA.

YOUTH AND COMMUNITY SERVICE continued

NEW HAMPSHIRE
Applications are invited from qualified youth and community workers for the post of Youth and Community Service Officer. The post holder will be responsible for the development and coordination of youth and community work in the county. The post is a full-time position with a salary of £3,400 per annum. Applications should be sent to the County Council, 100 High Street, Bournemouth, Dorset, BH1 1AA.



CLOSING DATE 3rd MAY, 1976 YOUTH SERVICE

FULL TIME YOUTH WORKER
J.N.C. Scale 2
PRESTON DISTRICT
Further particulars/forms from/to District Education Officer, Greath Buildings, Derby Street, Ormskirk.
ORMSKIRK YOUTH PEOPLE'S CLUB
As soon as possible.

YOUTH WORKER
J.N.C. Scale 2
Further particulars/forms from/to The District Education Officer, Derby Street, Ormskirk.
PADIHAM YOUTH CENTRE
As soon as possible.

YOUTH LEADER
J.N.C. Scale 3
Further particulars/forms from/to The District Education Officer, Education Office, 14 Nicholas Street, Burnley.

WARWICKSHIRE
A qualified YOUTH WORKER is required for the post of Youth and Community Service Officer. The post holder will be responsible for the development and coordination of youth and community work in the county. The post is a full-time position with a salary of £3,400 per annum. Applications should be sent to the County Council, 100 High Street, Bournemouth, Dorset, BH1 1AA.

WEST SUSSEX
County Council
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Primary ELT Specialist (Cameroon)

Ministry of National Education, Yaounde Member of a team concerned with the introduction of English in Francophone Primary Schools. To train teachers and prepare materials. Degree in English or modern languages, postgraduate TEFL qualification, primary experience and knowledge of French essential. Experience of teacher training and production of supplementary materials desirable. Salary: £4389-£5409 pa. Benefits: overseas and children's allowances; free accommodation. Two-year contract, renewable. 75 HE 12

Senior Teachers of English (Iran)

British Council (for National Iranian Oil Company), Abadan To teach English for Special Purposes Degree or teaching certificate, postgraduate TEFL qualification and about 5 years' experience, preferably overseas, essential. Single candidates or married couples, both qualified to teach. Salary: £4389-£5409 pa. Benefits: overseas and children's allowances; free accommodation. Two-year contract, renewable. 76 HO 56-57

Teachers of English (Iran)

British Council Teaching Centres Senior Teachers/Teachers for: Tehran, Isfahan, Meshed, Tabriz, for July, August or September. Degree or teaching certificate. Postgraduate TEFL/TEFL qualification and about 5 years' experience, preferably overseas, essential. Single candidates or married couples, both qualified to teach. Salary: £4389-£5409 pa. Benefits: overseas and children's allowances; free accommodation. Two-year contract, renewable. 76 HO 41-55

Lektor, English Language (Germany)

Gesamthochschule, Duisburg Degree, postgraduate qualification in Linguistics or TEFL and at least 3 years' experience, specialization in phonetics desirable, good knowledge of German essential. Salary: from DM 2,300 per month. Two-year contract, renewable. 76 CU 61

WIRRAL
METROPOLITAN BOROUGH OF
EDUCATION DEPARTMENT
YOUTH SERVICE
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Overseas Appointments

WAKEFIELD (City of)
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OVERSEAS Appointments continued

SOUTH AUSTRALIA

THE KINDERGARTEN UNION
Applications are invited for the post of Kindergarten Teacher. The post holder will be responsible for the development and coordination of kindergarten work in the union. The post is a full-time position with a salary of £3,400 per annum. Applications should be sent to the Kindergarten Union, 100 High Street, Bournemouth, Dorset, BH1 1AA.

GERMANY
Applications are invited for the post of German Teacher. The post holder will be responsible for the development and coordination of German work in the school. The post is a full-time position with a salary of £3,400 per annum. Applications should be sent to the German Teacher, 100 High Street, Bournemouth, Dorset, BH1 1AA.

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The British Council

invites applications for the following posts:—

Headmaster (Turkey)

The English High School for Boys, Istanbul An independent day school with approx 400 pupils, mainly Turkish, in the age range 11-20. Qualified teachers with a degree, preferably in English, Mathematics, Modern Languages or Science. Knowledge of Turkish or French useful. Salary: £7,572-£8,094 pa approx, 1st payable in sterling in Britain, 2nd payable in Turkish liras locally. Benefits: no local taxes; rent allowance; entertainment allowance; employer's portion of superannuation; terminal bonus. Two-year contract, renewable. 76 SS 72

Expert in Evaluation Techniques and Systems (Egypt)

National Centre for Educational Research, Cairo To assist in reform of the current examination system and techniques throughout the field of Egyptian school education. MA in Educational Psychology and Testing plus experience in a research unit or with an examination body. Considerable experience in test construction and application, in particular the Criterion Reference Tests. Salary: £5,001-£5,845 pa, local tax free. Benefits: free accommodation and children's allowances; free accommodation. Two-year contract, renewable. 76 AE 3

Liberian (Iran)

Kerman University To reorganise and expand existing technological library; to train staff; to establish new library and construction of a new library. Chartered librarians with a degree, preferably in Science/Technology, and minimum 3 years' experience, preferably in a higher educational institution. Salary: £5,142-£5,845 pa. Benefits: free accommodation or rent allowance; employer's portion of UK superannuation. Two-year contract, renewable. 76 HU 29

Head of Agricultural Science Department (Ghana)

Akroterri Teacher Training College To train students as junior secondary school teachers. Relevant degree, preferably with some training or experience in agriculture, 5 years' appropriate teaching experience essential. Preferred age range 30-45 years. Salary: £4,389-£5,409 pa. Benefits: free accommodation; overseas and children's allowances; boarding school fees; paid terminal leave. Four-year contract (2-year contract, renewable, may be possible).

Primary Teachers (Iran)

The Primary School, Kerman University Head of Primary School. To establish and run a small English-medium school, initially approx 24 children; to teach infants/juniors. Qualified teacher with several years' relevant experience, preferably including some administrative duties. Salary: £4,242-£4,683 pa approx. Nursery Teacher. To teach 3-5 year olds. Qualified teacher with at least 3 years' relevant experience. Salary: £2,507-£4,212 pa approx. Benefits for both posts: free accommodation or rent allowance; employers' portion of UK superannuation. Two-year contracts, renewable. 76 HS 68-69

Teachers Commercial Subjects (Kuwait)

Kuwait Business Institute 5 Teachers of Office Practice. 4 Teachers of Computer Science. UK citizens, male and female, with degree or appropriate professional qualification and relevant teaching experience. Some practical experience required for Office Practice posts. Salary: £5,143 pa approx, tax free. Benefits: free furnished accommodation; car and living allowances. Two-year contract, renewable. 76 AO 29-37

Teacher of Nuffield Biology (Brazil)

St. Paul's School, Sao Paulo Qualified teacher with 3 years' experience. Salary: £4,645-£5,815 pa approx. Benefits: overseas and accommodation allowances; medical scheme; superannuation. Two-year contract, renewable. 76 US 70

Primary School Teacher (Hungary)

British Embassy School, Budapest A primary school with 60-70 pupils aged 5-11 years. Candidates must be trained primary teachers with at least 3 years' experience. Single candidates only. Salary: appropriate point on Burnham Scale 1, plus 6,000 Fts pa local allowance (at present £144). No local tax payable. Benefits: medical scheme; free accommodation; employer's portion of superannuation. Contract for one year initially with the British Embassy School Committee. 76 SS 71

Return fares are paid. Local contracts guaranteed by the British Council.

Please write, briefly stating qualifications and length of appropriate experience; quote relevant reference number and title of post for further details and an application form to The British Council (Appointments), 65 Davies Street, London W1Y 2AA.

called "Princess Tickle".

